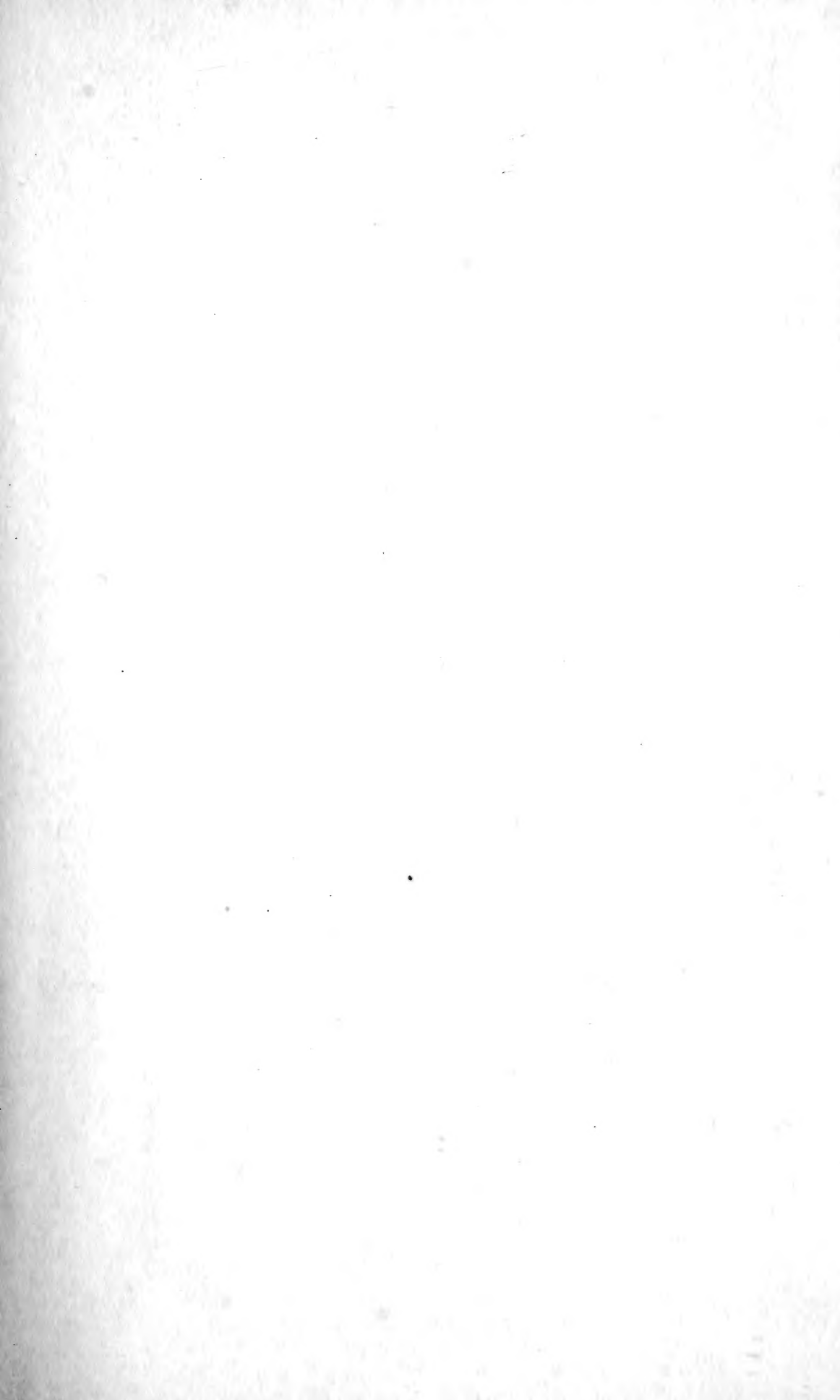
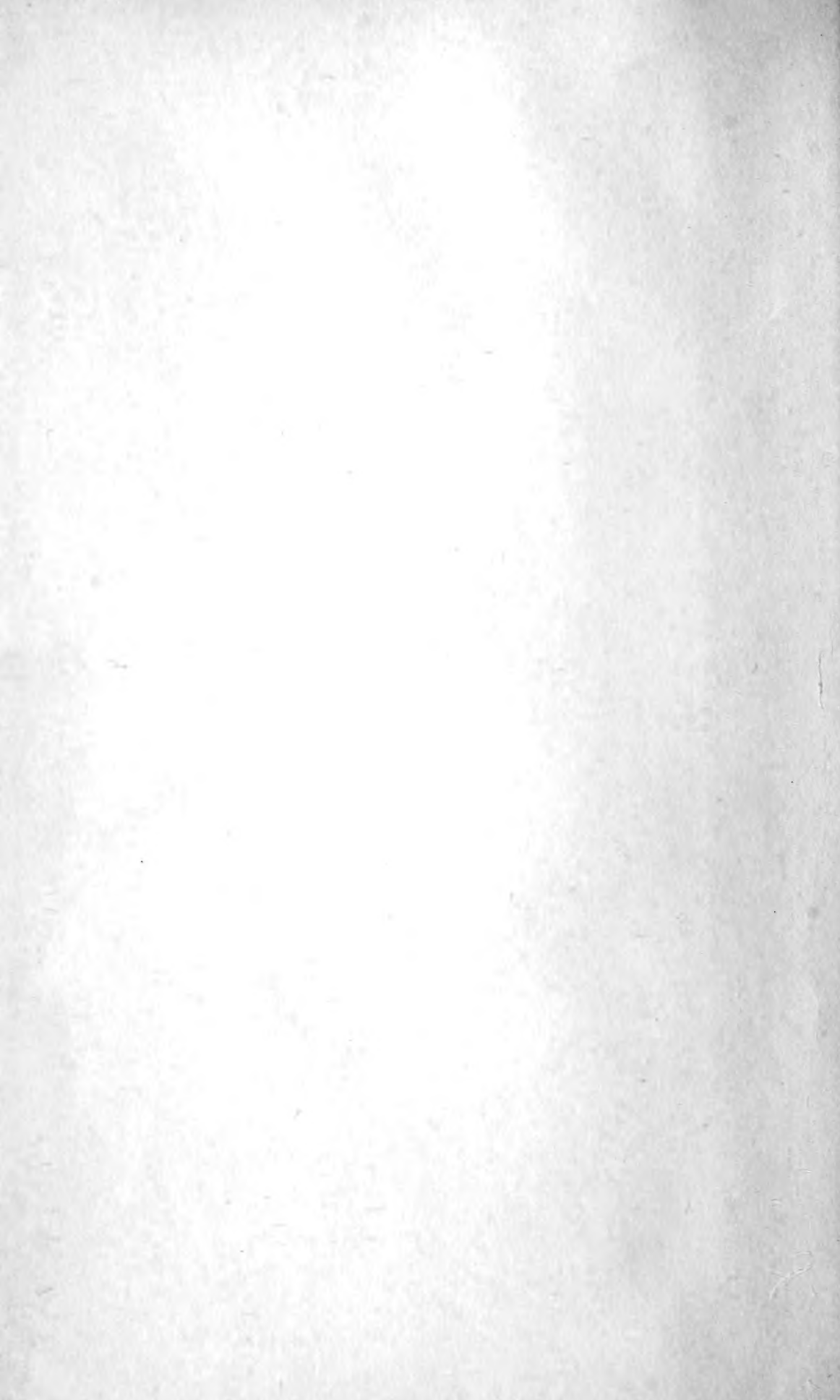


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1917-1918

NO. 30

ABSTRACT

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OF THE PROCEEDINGS OF THE

LINNÆAN SOCIETY

OF

NEW YORK

For the Year Ending

March 12, 1918

CONTAINING

Bird-notes from Florida. By JOHN TREADWELL NICHOLS

Bird Temperatures. By JAY A. WEBER

Date of Issue, September 18, 1918

Officers of the Linnæan Society

OF NEW YORK

1917-1918

<i>President</i>	-	-	-	-	-	-	-	-	JONATHAN DWIGHT
<i>Vice-President</i>	-	-	-	-	-	-	-	-	JULIUS M. JOHNSON
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<i>Treasurer</i>	-	-	-	-	-	-	-	-	LEWIS B. WOODRUFF

The Society meets on the second and fourth Tuesday evenings of each month, from October to May inclusive, at the American Museum of Natural History, 77th Street and Central Park West, New York City.

AMERICAN MUSEUM
OF NATURAL HISTORY

ABSTRACT

OF THE PROCEEDINGS OF THE

LINNÆAN SOCIETY

OF

NEW YORK,

FOR THE YEAR ENDING MARCH 12, 1918.

THIS is the thirtieth in the series of Abstracts published by the Linnæan Society of New York, and, like the preceding issues, is prepared mainly as a brief review of the work of the Society during the year closing with the date indicated above. Papers presented before the Society and published elsewhere (often enlarged or otherwise different in form) are mentioned with proper reference to the place of publication. The Secretary of the Society, Mr. Charles H. Rogers, entered the National Army of the United States, the end of May, 1918, and the present Abstract has been prepared from the minutes by the remaining members of the Committee on Publications.

March 27, 1917.—The President in the chair. Ten members (Dr. Dwight and Messrs. Chapin, Gladden, Hix, LaDow, Lang, Marks, Miller, L. N. Nichols and Rogers) and 28 visitors present.

The Secretary read a letter from Mr. Dutcher, appreciative of the action of the society in transferring his name from the list of Resident to that of Honorary Members.

Mr. Walt F. McMahon, whose name had been proposed at the preceding meeting, was elected to Resident Membership.

Dr. G. Clyde Fisher, of the American Museum of Natural History, was proposed by Mr. Rogers for Resident Membership; the name was referred to the Membership Committee.

Mr. Rogers reported the apparent wintering in the northern end of Central Park of a Red-crested Cardinal (*Paroaria cucullata*), probably an escaped cage bird, as one had been seen there in December and more than once in March.

Mr. Gladden recorded hearing a whisper-song from a Fox Sparrow (*Passerella i. iliaca*).

Mr. Lang gave the Society a lecture on "Native Dances in the Belgian Congo."* During his six years in that region the speaker had had opportunities to study the dances of several tribes, and now described them in detail, together with the head-dresses and other details of the dancers' costumes. The lecture was fully illustrated with lantern slides.

April 10, 1917.—The President in the chair. Eleven members (Dr. Dwight and Messrs. Cleaves, Fleischer, Gladden, Hix, Marks, McMahon, L. N. Nichols, Rogers, Weber and Woodruff) and eight visitors present.

Dr. G. Clyde Fisher, whose name had been proposed at the preceding meeting, was elected to Resident Membership.

The President appointed all the old committees without change for the ensuing year. They stood as follows:

Membership, Messrs. J. M. Johnson, Hubbell, Weber.

Finance, Messrs. Woodruff, Granger, Weber.

Papers & Lectures, Messrs. Rogers, Granger, Murphy.

Publications, Messrs. Rogers, J. M. Johnson, J. T. Nichols.

Bird-Banding, Messrs. Cleaves, J. T. Nichols, Rogers.

Bird-Census Blanks, Messrs. Weber, Cleaves, J. T. Nichols, Rogers.

Messrs. Hix, Fleischer and Weber spoke of the continued presence of large numbers of ducks on Overpeck Creek, N. J. Mr. Weber remarking that there must have been one thousand Black Ducks (*Anas rubripes*) there the morning of the meeting. Besides the species regular there, Mr. Fleischer had seen two Baldpates (*Mareca americana*) April 1 and Mr. Weber said that the only Mergansers he had observed there this spring he had identified as Red-breasted (*Mergus serrator*). That

* See photographs in *American Museum Journal* October and December, 1915.

morning Mr. Hix had seen great numbers of ducks as well as Bonaparte's (*Larus philadelphia*) and Ring-billed Gulls (*Larus delawarensis*) at Long Beach. Mr. Fleischer had seen a Holbæll's Grebe (*Colymbus holbællii*) at the 130th St. Ferry April 3 and Mr. L. N. Nichols four of that species at Pelham Bay Park on the fourth.

Mr. Cleaves reported a Killdeer (*Oxyechus v. vociferus*) nest with two eggs on Staten I. on April 1. It was plowed under, but next week the birds were observed preparing to start afresh. Another Barn Owl (*Aluco pratincola*) station had been found on the island, and three or four birds said to have been seen there.

Mr. Weber brought up the subject of the blanks printed last year to record the fluctuations in the abundance of certain species of birds. It had been too late in the season to make much of a start, but plans were discussed for pushing the scheme this year.

Mr. Cleaves showed the Society a large number of his more recent lantern slides, and described the various incidents illustrating the extent of avian intelligence, ways of feeding and of housing birds, etc., that they illustrated.

April 24, 1917.—The President in the chair. Nine members (Dr. Dwight and Messrs. Gladden, Hix, Ingalls, F. E. Johnson, Marks, Murphy, Rogers and Weber) and fifteen visitors present.

Mr. Weber reported a flock of eight Wilson's Snipe (*Gallinago delicata*) in the Overpeck Marshes April 21, the largest number he had seen together so close to New York City. He suggested that their habit of circling in the air a few times after being flushed was to give others, starting later, a chance to catch up, that they might all go away together. He also mentioned the appearance of Whip-poor-wills (*Antrostomus vociferus*) this spring in a piece of woods near Palisades Park, in which the trees had recently been thinned out, where he had never before found them. On the morning of the meeting he noticed the first Box Turtle (*Terrapene carolina*) of the season.

Mr. Robert Cushman Murphy presented the evening's lecture, on "The Way of the Sperm-Whaler."* It was a complete and graphic account, illustrated with lantern slides from photographs and drawings, of the hunt, capture and "cutting-in" of that vigorous and dangerous fighter, the Sperm Whale, as observed by the speaker during a sixteen thousand mile cruise in the South Atlantic on the New Bedford whaling-brig "Daisy" in 1912-1913. The invention of steam navigation and of whaling cannon has had no effect on the chase of whales of this species, and the animals are still pursued in sailing ships and open boats and attacked and killed with hand-thrown harpoons and lances.

May 8, 1917.—The President in the chair. Nine members (Dr. Dwight and Messrs. Fleischer, Gladden, Hix, J. M. Johnson, Marks, McMahon, L. N. Nichols and Rogers) and ten visitors present.

Mr. Gladden proposed Mr. Thornton W. Burgess of Springfield, Mass., and Mr. Rogers proposed Mr. W. W. Grant and Mr. Frances Harper, formerly active Resident Members but now of Geneva, N. Y., and Washington, D. C., respectively, for Corresponding Membership. The names were referred to the Membership Committee.

Mr. Hix reported Piping Plover (*Ægialitis meloda*) to the number of sixteen at Long Beach, L. I., April 29, and a Sharp-tail Sparrow (*Passerherbulus caudacutus*) feeding in a street in Long Beach village; also a Rough-winged Swallow (*Stelgidopteryx serripennis*) in Central Park, New York City, the first he had ever seen there.

Mr. Fleischer stated that he and a party of fifteen bird students, all with glasses (including two pairs of 8x), on April 28, had studied for over an hour at from 10 to 25 feet, in good light, a singing male Yellow-throated Warbler (*Dendroica d. dominica*) in Prospect Park, Brooklyn. Every marking, including the yellow lores, had been carefully noted and compared on the spot with book-descriptions and pictures. Mr. George Schoonhoven had seen the bird two days later. Mr. Nichols remarked that he and two others had carefully studied it on the twenty-ninth.

* See this title in *Sea Power*, June, July, and August, 1917.

The continuous cold weather and the resulting great scarcity of May migrants were generally commented upon, and the following belated northern birds recorded: by Mr. Hix, a Brown Creeper (*Certhia familiaris americana*), May 8 in Central Park; by Mr. Fleischer, a Winter Wren (*Nannus h. hiemalis*), May 6 in Prospect Park; and by Mr. Rogers, two Yellow Palm Warblers (*Dendroica palmarum hypochrysea*) May 5 and a female Evening Grosbeak (*Hesperiphona v. vespertina*), May 7 at Yardville, N. J.

Mr. Rogers exhibited a Peacock, a hybrid between *Pavo cristatus* and *P. muticus*, recently received from the N. Y. Zoölogical Gardens by the American Museum and mounted. He also showed mounted Peacocks of both parent species, and pointed out that the hybrid's crest was essentially as in *cristatus*, its wing coverts as in *muticus*, and its throat and breast plumage and partly bare face a mixture of the two.

Dr. Dwight exhibited a skin of the gull recently described as *Larus thayeri*, and skins of its nearest relatives as well, and pointed out their differences and relationships and with the help of maps, their distribution.* His conclusions were that the birds known as Herring Gull, Thayer's Gull, Vega Gull and Yellow-legged Herring Gull, should stand respectively as follows: *Larus argentatus argentatus*, *L. a. thayeri*, *L. a. vegæ*, and *L. cachinans*.

May 22, 1917.—The President in the chair. Fourteen members (Dr. Dwight, and Messrs. Cleaves, Fleischer, Gladden, Granger, Halter, Heller, Hix, Ingalls, J. M. Johnson, Lang, Marks, Rogers, Thayer) and fifty-four visitors present.

Mr. T. W. Burgess, Mr. W. W. Grant and Mr. Francis Harper, whose names had been proposed at the previous meeting, were elected to Corresponding Membership.

Mr. Lester Walsh was proposed by Mr. Johnson for Resident Membership; the name was referred to the Membership Committee.

The extraordinary backwardness of the weather, and con-

* See "The Status of '*Larus thayeri*, Thayer's Gull,'" *Auk*, XXXIV, 413-414, pl. XV.

sequently of the migration, was generally commented on. The daily mean temperature of the first twelve days of the month averaged 10° below normal, so that Sunday the 13th, instead of being about the height of the migration, showed many April migrants, usually gone by that date, still present (some common), and many May migrants, usually common, barely or not at all represented. Mr. J. M. Johnson reported a Brown Creeper (*Certhia familiaris americana*) in Central Park, May 16, and Mr. Granger one on the 20th at Oakland, N. J. Mr. Johnson also told of covering with Mr. Rogers, on the 13th, the regular "Big Day" route northward from Plainfield, N. J., on which they listed barely eighty-six, including the following species, usually gone before that date: Rusty Blackbird (*Euphagus carolinus*), Junco (*Junco h. hyemalis*), Yellow Palm Warbler (*Dendroica palmarum hypochrysea*), Ruby-crown Kinglet (*Regulus c. calendula*), Savannah Sparrow (*Passerculus sandwichensis savanna*) and Sapsucker (*Sphyrapicus v. varius*)—all represented by at least ten individuals except the last two (one each). Also there were many more Blue Jays (*Cyanocitta c. cristata*) and White-throat Sparrows (*Zonotrichia albicollis*) than usual so late. Chipping Sparrows (*Spizella p. passerina*) and Barn Swallows (*Hirundo erythrogaster*) of which few if any but breeding individuals are normally here at this date, were still present in flocks. Of the following species, all of which should have been well represented and many very common, not a specimen was noted: Kingbird (*Tyrannus tyrannus*), Crested Flycatcher (*Myiarchus crinitus*), Wood Pewee (*Myiochanes virens*), Rosebreast Grosbeak (*Zamelodia ludoviciana*), Indigo Bunting (*Passerina cyanea*), Scarlet Tanager (*Piranga erythromelas*), Red-eye (*Vireosylva olivacea*) and Yellow-throat Vireos (*Lanivireo flavifrons*), Cape May (*Dendroica tigrina*), Baybreast (*D. castanea*), Black-poll (*D. striata*), Blackburnian (*D. fusca*) and Canadian Warblers (*Wilsonia canadensis*). Of yet others, only one or two lonely individuals were seen. Later in the week a big flight occurred, and members present agreed that the height of this spring's migration fell on May 19.

Mr. William Beebe gave the Society a lecture on "Wild Life at Kalacoon," Kalacoon being the research station established in British Guiana by the N. Y. Zoölogical Society. While readily accessible to civilization, and with comfortable quarters for the staff, it is far enough up the river to be in virtually primeval wilderness, with an amazing abundance of wild life in the immediate vicinity. Mr. Beebe spoke of some of these interesting creatures, and told something of the work of the station, using lantern slide illustrations.

October 9, 1917.—The President in the chair. Nine members (Dr. Dwight and Messrs. Bowdish, Chubb, Davis, Hix, Marks, J. T. Nichols, L. N. Nichols and Rogers) and six visitors present.

Mr. Lester Walsh, whose name had been proposed at the preceding meeting, was elected to Resident Membership.

Mr. Davis contributed the following notes: Hermit Thrush (*Hylocichla guttata pallasi*).—In July, 1908, a colony was discovered at Yaphank, L. I. They were again observed during the summer of 1909. (See *The Auk*, XXVI, p. 435.) On July 26, 1914, two Hermit Thrushes were heard singing at Deep Pond, which is near Wading River and about eight miles north of Yaphank. Last summer, on August 1, and again on the 4th, a Hermit Thrush was heard singing in the woods just south of Riverhead, near the road leading to Great Pond, and was located without difficulty; this was about twelve miles east of Yaphank. So it will be seen that this species appears to breed over a large area on Long Island, and while the Government military camp (Camp Upton) between Yaphank and Manorville will probably disturb the colony of Thrushes there, there is every reason to hope that the birds will stay on the Island.

Hermit Spadefoot (*Scaphiopus holbrookii*)—At night, near Wading River, June 25, 1917, while looking for insects with a lantern a small specimen of this toad was found by the side of the road.

Mr. Chubb reported the presence of an American Egret (*Herodias egretta*), apparently, judging from one slightly

injured leg, the individual that was last to leave of the three present last year, at Van Cortlandt Park irregularly from mid-July to mid-August. He had found the Pileated Woodpecker (*Phlæotomus pileatus abieticola*) "fairly abundant" in the Catskills in June; and on September 10, at Cape May, N. J., had witnessed a great migration of Monarch Butterflies (*Danaus archippus*) at the extreme point,—when alighted they averaged on many trees about two to a leaf.

Mr. Rogers spoke of the unusual number of Egret and Little Blue Heron (*Florida c. cærulea*) records for New Jersey, New York and Connecticut the past summer, and Mr. J. T. Nichols said he had seen each species more than once at Mastic, L. I.

Mr. Hix recorded two female Wood Ducks (*Aix sponsa*) September 29 and another October 8 on the 103d Street Pond, Central Park, and a Mourning Warbler (*Oporornis philadelphia*) in the Park on June 6.

Mr. L. N. Nichols said that a year ago last summer for the first time he had found a few Pileated Woodpeckers about Cranberry Lake, N. Y., and that they were not at all shy; their local name was "Rain Crow." He also spoke of finding a Cape May Warbler (*Dendroica tigrina*) in the same tree in Bronx Park each spring for the last five to six years.

Mr. J. T. Nichols spoke at length on the autumn migration of Limicolæ on Long Island. Among his conclusions were that the bulk of each species has a definite late-summer range to which it travels from the breeding-grounds and where, if conditions be favorable, it remains till its departure for its winter range. He illustrated his remarks with a chart showing the weekly fluctuations in abundance, during the last season, of the Greater (*Totanus melanoleucus*) and Lesser Yellowlegs (*T. flavipes*), Least (*Pisobia minutilla*) and Semipalmated Sandpipers (*Ereunetes pusillus*) and Semipalmated (*Ægialitis semipalmata*) and Black-bellied Plover (*Squatarola squatarola*). Discussion followed.

Mr. Rogers gave an account of the overcoming and swallowing of a small Garter Snake (*Thamnophis s. sirtalis*) by a rather smaller Milk Snake (*Lampropeltis t. triangulum*) as witnessed by him last summer at Englewood. A general discussion of ophidian habits followed.

October 23, 1917.—The President in the chair. Seven members (Dr. Dwight, Mr. Cleaves, Dr. G. C. Fisher and Messrs. Hix, Marks, McMahon, Rogers) and thirteen visitors present.

Owing to conflict with the next meeting of the American Ornithologists Union, it was voted to change the Society's next meeting from November 13 to 7.

No member present had seen this autumn any Pine Siskins (*Spinus p. pinus*) or Red-breast Nuthatches (*Sitta canadensis*) so common a year ago, except that Mr. Hix had seen one of the latter. The late arrival of the White-throat Sparrow (*Zonotrichia albicollis*) and Junco (*Junco h. hyemalis*) had also been generally noted; Mr. Hix said that neither species had become abundant in Central Park till October 17.

The evening's lecture was by Mr. Charles H. Rogers, on "The Colors of Birds." The speaker gave a résumé of the physical nature of colors due to pigment, to pigment combined with structure, and to structure alone, and of the different types of pigment and of structure, with specimens, and drawings from microscopical studies, as illustrations. There followed a general discussion, led by Dr. Dwight, of coloring and the effects of wear and molt, etc.

November 7, 1917.—The President in the chair. Seven members (Dr. Dwight and Messrs. Cleaves, Granger, Hix, L. N. Nichols, Marks, Rogers) and a visitor (Mr. J. H. Fleming) present.

Mr. L. N. Nichols told of a Junco's (*Junco h. hyemalis*) nest but five feet from a human dwelling at Cranberry Lake, N. Y., in the Adirondacks, last summer; the young flew on August 20. He said that in that neighborhood the Great Horned (*Bubo v. virginianus*) and Barred Owls (*Strix v. varia*) were called respectively "Six-hooters" and "Eight-hooters." He had on the day of the meeting heard a late Catbird (*Dumetella carolinensis*) give its full song, though in a low voice. Mr. Nichols' son had seen a Red-breast Nuthatch (*Sitta canadensis*) in Bronx Park, November 6.

Mr. Cleaves recorded the first known nesting of the Purple Martin (*Progne s. subis*) on Staten Island. A pair, the female

probably and the male obviously young of the previous year, nested last summer in a martin-house on his grounds. Mr. Cleaves described many interesting details of the nesting and exhibited the material of the nest. The pair kept away others to the best of their ability, but would not come near their home while one of their neighbors, a Robin (*Planesticus m. migratorius*) perched on it, as she often did. The nest consisted largely of bits of twig, straw, etc., of a remarkably uniform length of about four inches; the speaker said the birds never found the way to take into the nest a long twig that caught across the entrance, as House Wrens (*Troglodytes a. aëdon*) do regularly. Another noticeable part of the material was a large number of small leaves, which had been added green from time to time.

Mr. Granger related an experience with a Horned Grebe (*Colymbus auritus*) at Long Beach, L. I., on October 28. He and Mr. Rogers had found one, perhaps wounded, sitting on the beach; when closely approached, it rose to its feet, scuttled across the sand against the wind, rose, flew in a wide circle, and came down on a sand-bar.

November 27, 1917.—The President in the chair. One Corresponding Member (H. C. Oberholser) thirteen Resident members (Dr. Dwight and Messrs. Davis, Granger, Griscom, Halter, Hix, J. M. Johnson, LaDow, Marks, J. T. Nichols, L. N. Nichols, Rogers and Weber) and fifteen visitors (including Mr. Waldron DeWitt Miller) present.

It was voted to omit, this year, the second December meeting, owing to its falling on Christmas Day.

Late dates for the Wood Duck (*Aix sponsa*) were recorded by Mr. Weber, who had seen a male in Queens, November 26, and by Mr. L. N. Nichols, who had seen fourteen in Van Cortlandt Park, November 25.

Mr. J. T. Nichols reported the recent accession by the American Museum of a particularly interesting fish from China, a small species of catfish (*Liobagrus nigricauda*), about 3 in. long, the whole body and fins covered with loose skin.

Mr. Rogers remarked that reports and specimens which

had reached the Museum indicated another serious southward movement of Goshawks (*Astur a. atricapillus*) this season.

Mr. W. DeW. Miller spoke to the Society on "Field Notes on the Birds of Nicaragua." He had spent several months of this year, most of the time with Mr. Ludlow Griscom and Mr. William B. Richardson, visiting typical localities in the several life-zones of Nicaragua to collect specimens for the American Museum and acquire a first-hand knowledge of the country's birds. The expedition added about thirty species to the known avifauna of Nicaragua. Mr. Miller gave a detailed account of the trip and described interesting nesting and other habits of many of the birds observed, especially of the locally abundant, but hitherto almost unknown, Nicaraguan Grackle (*Megaquiscalus nicaraguensis*). Specimens from the collection illustrated the talk.

December 11, 1917.—The President in the chair. Fourteen members (Dr. Dwight, Lieut. Chapin, Messrs. Cleaves, Davis, Gladden, Granger, J. M. Johnson, Lang, Marks, J. T. Nichols, L. N. Nichols, Quarles, Rogers and Weber) and nine visitors present.

Mr. Davis said that the basin of Silver Lake, S. I., had been made into a reservoir into which the water was turned about November, 1916, but that Herring Gulls (*Larus argentatus*) had never used it till this November, when they began coming to it in scores.

Mr. J. T. Nichols stated that Robins (*Planesticus m. migratorius*) and Fox Sparrows (*Passerella i. iliaca*) seemed to be staying later than usual in localities on western Long Island where they do not winter; this year he had seen the former as late as December 3, the latter December 7. He had also seen two Northern Shrikes (*Lanius borealis*).

Mr. L. N. Nichols also reported two Northern Shrikes (in the Bronx); one of them was eating a House Sparrow (*Passer domesticus*) and when disturbed flew away carrying its prey by the neck with its bill. He further mentioned seeing Herring Gulls three times flying under the Third Avenue Harlem River Bridge; he thought they rarely did this, and Mr.

Gladden remarked that from a point whence he had observed the Brooklyn Bridge for fifteen years, he had never seen a Gull fly under it.

Mr. Weber commented on the scarcity of Chipping Sparrows (*Spizella p. passerina*) in New Jersey and New York the last few years. Mr. L. N. Nichols said he had never seen so few as this summer,—but one pair in Bronx Park and similar conditions elsewhere in New York and Connecticut. Mr. Granger remarked that they must have been concentrated in Rutland Co., Vt., where he had never seen more than during this summer and autumn.

Mr. F. Seymour Hersey, who had spent two summers in Alaska, spoke to the Society on the distribution and migration-routes of certain little known species of Alaskan water-fowl and shore-birds, using a large map in illustration, and exhibited a series of photographs of birds, their nests and surroundings.

First Lieut. James P. Chapin gave the Society an account of the different genera of African Hornbills,* with particulars of the nesting habits of the Congo species, illustrating his talk with lantern slides and specimens.

January 8, 1918.—The President in the chair. Nine members (Dr. Dwight and Messrs. Gladden, Hix, Marks, J. T. Nichols, L. N. Nichols, Rogers, Weber and Woodruff) and five visitors present.

The Secretary showed a list of birds observed during the autumn on Sandy Hook, N. J., by Capt. John P. Young, C. A. C. N. A., who had been stationed there since August, and read some of the most interesting records.

Mr. Weber reported that he had observed Pine Siskins (*Spinus p. pinus*) at Palisades Park, N. J., almost daily from October 15–30, 1917, and had collected one on the 26th.

Mr. Hix said that on January 6 he and Mr. Walden Pell, 2d, had found American Mergansers (*Mergus americanus*) abundant on the Hudson, fully 500, chiefly males, between the 130th St., and Dyckman St. Ferries. They had watched a

* See "Nesting Habits of the African Hornbill," by Herbert Lang and James P. Chapin, *American Museum Journal*, April, 1918, 271–277.

Herring Gull (*Larus argentatus*) worrying three Goldeneyes (*Clangula clangula americana*) on the water, which dove to escape the annoyance; and had also seen six Bald Eagles (*Haliaeetus l. leucocephalus*) one of them adult, and another being chased by a Sparrow Hawk (*Falco s. sparverius*). Mr. L. N. Nichols remarked that in the autumn he had seen a Sparrow Hawk chasing two Red-tails (*Buteo borealis*).

The presence of the Northern Shrike (*Lanius borealis*) in unusual numbers was spoken of by everyone who had been afield. A discussion as to this bird's method of carrying its prey showed that both ways, in the bill and in the feet, had been observed by members present.

Mr. Weber told of his studies, during the past few years, in the bodily temperature of birds, and gave examples from his notes. While in the most general terms it might be said that the higher forms had the higher temperatures, the speaker said that even the rather large amount of data he had collected was insufficient to point to any definite conclusions. Considerable discussion followed.

January 22, 1918.—The President in the chair. Ten members (Dr. Dwight and Messrs. Cleaves, Granger, Hix, Lang, Marks, J. T. Nichols, Rogers, Thayer and Weber) and thirty-one visitors present.

Mr. Cleaves recorded three Canvasbacks (*Marila valisineria*) on Princes Bay, S. I., January 20. He said he had found it a regular practice with Herring Gulls (*Larus argentatus*) especially when their own chief feeding grounds were flooded, to worry diving ducks,—Goldeneyes (*Clangula clangula americana*), Scaups (*Marila* sp.) and Buffleheads (*Charitonetta albeola*).

Mr. Nichols spoke of finding recently the remains of a Box Turtle (*Terrapene carolina*) he had marked last July at Mastic, L. I. It was about a half-mile from the place where he had released it and an eighth from where he had originally found it. This was in line with previous findings tending to show that the species has individually a very narrow range to which it returns when taken not too far away.

Mr. Rogers said that Mr. W. DeW. Miller and he, on an eight-hour trip southward from Plainfield on January 20, had listed twenty-four species of birds, including a Saw-whet Owl (*Cryptoglaux a. acadica*) and a flock of four male and a female Rusty Blackbird (*Euphagus carolinus*).

Mr. Lang gave the Society a lecture on "Native Art in Congo Land."* He described in detail negro art in the form of fancy coiffures, built to last several weeks, of the wearer's own and others' hair, often with head dresses of the red tail feathers of the Gray Parrot, etc.; ivories, from hairpins to musical instruments, many ornamented with elaborately drawn scenes from native life; intricate designs of scars covering the greater part of the body; houses, and large public buildings with panels decorated with patterns beautifully woven in rattan or painted in red, black and white; and other articles of clever design and execution. The lecture was illustrated with a wealth of colored lantern slides.

February 12, 1918.—The President in the chair. Eight members (Dr. Dwight and Messrs. Gladden, Hix, Marks, J. T. Nichols, L. N. Nichols, Rogers and Weber) and five visitors present.

The Secretary read, and it was voted to accept, the resignations from Resident Membership on account of continued residence at a distance, of Mr. Arthur Goadby and Mr. A. A. Saunders.

Mr. Rogers proposed for Resident Membership Dr. E. R. P. Janvrin, a New York physician, for many years a student of birds, and long a frequent attendant at the Linnæan Society's meetings. The name was referred to the Membership Committee.

It was voted to hold an annual dinner like last year's, and the President appointed Mr. Woodruff and Mr. Rogers as a committee to make the arrangements.

There was a general discussion of this winter's bird life about

* See photographs in *American Museum Journal*, October and December, 1915; also "Famous Ivory Treasures of a Negro King," the same, October, 1918, *in proof*.

New York City. It developed that there had been a scarcity, at least in northern New Jersey but less so in the city and eastward, of White-throats (*Zonotrichia albicollis*) Tree Sparrows (*Spizella m. monticola*) and Juncos (*Junco h. hyemalis*), and that no one present knew of a record of Field Sparrow (*Spizella p. pusilla*), Golden-crowned Kinglet (*Regulus s. satrapa*), Hermit Thrush (*Hylocichla guttata pallasii*) or Bluebird (*Sialia s. sialis*) since December. On the other hand, Downy Woodpeckers (*Dryobates pubescens medianus*), White-breasted Nuthatches (*Sitta c. carolinensis*), Tufted Tits (*Baeolophus bicolor*), Chickadees (*Penthestes a. atricapillus*) and others were in ordinary abundance, and the presence of the Northern Shrike (*Lanius borealis*) in remarkable numbers was the feature of the season. Mr. Weber stated that the flock of House Sparrows (*Passer domesticus*) around his house at Palisades Park usually decreased about fifty percent during the winter, but that this season it had started with thirteen individuals of which but three or four now remained. During the severe cold, Mr. Rogers had found a scarcity of large hawks in the Overpeck Marshes and unusual numbers of them in the woods and further inland. He had noticed a Herring Gull (*Larus argentatus*) on the Hudson on January 27 in apparently perfect adult winter plumage but still with a black-ringed bill and somewhat dusky pink feet. On February 7 he and Mr. Granger had watched this species and the Black-backed Gull (*Larus marinus*) at Long Beach feeding on Surf Clams (*Macra solidissima*), for which they were apparently feeling with their feet in shallow water; the beach was strewn for miles with hundreds of the empty shells, from which several Horned Larks (*Otocoris a. alpestris*) were gleaning particles of flesh. Mr. Rogers had recently heard from Capt. Young that the Brown Thrasher (*Toxostoma rufum*) at Sandy Hook was still thriving.

Mr. Hix said that on February 4 in some open water off Clason Point, the Bronx, he had seen about 1000 Scaup (*Marila* sp.), 100 Black Ducks (*Anas rubripes*), 20 Goldeneyes (*Clangula clangula americana*) and 4 White-wing Scoters (*Oidemia deglandi*).

Mrs. Harden, a visitor, reported the trapping of a Snowy Owl (*Nyctea nyctea*) at Wilton, Conn., this winter.

Mr. J. T. Nichols spoke on the spring migration in Florida, part of which he had witnessed in 1917, chiefly about the Keys; and gave many of his more interesting records, especially of several species which, migrating for the most part by a more westerly route, are considered rare in Florida.

Dr. Dwight explained some of his ideas on the differences between species and subspecies, emphasizing the importance which must be attached to the quantitative or qualitative character of the differences between forms, the former being considered as subspecific, the latter as specific in value.* He illustrated his remarks with specimens of several North American sparrows.

February 26, 1918.—The President in the chair. Seventeen members (Dr. Dwight, Messrs. Bowdish and Chubb, Dr. G. C. Fisher and Messrs. Gladden, Granger, Ingalls, Janvrin (elected later), F. E. Johnson, J. M. Johnson, Lang, Murphy, J. T. Nichols, L. N. Nichols, Rogers, Weber and di Zerega) and twenty-one visitors present.

The Secretary read a letter to Dr. Dwight from Mr. J. de Lagerberg, enclosing a clipping from a Swedish newspaper which announced plans for a Linnæus Museum and a reconstruction of the garden at the old home of Linnæus at Upsala.

The Secretary read also an invitation from the Kansas Academy of Science inviting the Linnæan society to send a delegate to the celebration of the Academy's semi-centennial anniversary, to be held in Lawrence, Kan., March 15 and 16.

Dr. E. R. P. Janvrin, whose name had been proposed at the preceding meeting, was elected to Resident Membership.

Bluebirds (*Sialia s. sialis*), the first spring arrivals this year, were reported as having been seen February 24 at Palisades Park (six, by Mr. Weber) and at Demarest (by Mrs. B. S. Bowdish).

* See "The Geographical Distribution of Color and of other Variable Characters in the Genus Junco: a New Aspect of Specific and Subspecific Values," *Bull. Am. Mus. Nat. Hist.*, XXXVIII, 269-309, Pl. XI-XIII.

Mr. Bowdish described how he had tamed two Longear Owls (*Asio wilsonianus*) which roosted habitually in the yard of his house, so that they would come for bodies of House Sparrows (*Passer domesticus*) thrown to them.

Dr. E. O. Hovey gave the Society a lecture on the birds and mammals observed by him during two years spent in the Cape York Region, Greenland, while on the recent Crockerland Expedition of the American Museum. His talk was illustrated with many lantern-slides of birds and their nests, of mammals, and of the scenery, etc.

March 12, 1918.—The President in the chair. Twenty-one members (Dr. Dwight, Messrs. Bowdish, Cleaves, Davis, Dr. G. C. Fisher, Messrs. Granger, Helme, Herrick, Hix, Janvrin, F. E. Johnson, J. M. Johnson, McMahon, J. T. Nichols, Pearson, Riker, Rogers, Thayer, du Vivier, Weber and Woodruff) and eighteen visitors present. This meeting followed immediately the Sixth Annual Dinner, held in the Mitla Room of the American Museum and attended by the twenty-one members mentioned and seventeen guests.

The Secretary also read notes of regret from Mr. Dutcher, Mr. Sage, Mr. Quarles, and other members unable to attend the dinner.

Dr. Dwight proposed for Resident Membership Mr. H. Ira Hartshorn and Mr. Charles M. Breder, Jr., both bird-students of Newark, N. J., the former now assisting Dr. Dwight in the care of his collection; the names were referred to the Membership Committee.

The Treasurer read his annual report, showing a balance in the Treasury of \$2,446.96, a sum slightly larger than that of a year ago, in spite of a falling off in membership and the publishing of a two years "Abstract."

The Secretary then read his Annual Report, as follows:

During the past year the Linnaean Society has held fifteen meetings—the second December meeting was omitted owing to its falling on Christmas Day—with a total attendance of 412. The Fifth Annual Dinner was attended by a Corresponding Member, twenty-four Resident Members and fourteen guests, in addition to all of whom another Resident Member and three visitors were present at the Annual Meeting the same evening. At

the remaining fourteen meetings the total attendance averaged twenty-six, that of members 10.6, both figures a decided falling-off from those of the two years next preceding, though greater than those of three and four years ago. The largest number present at any one meeting was sixty-eight, on May 22 (of members, seventeen, February 26) the smallest was 8.

The Society has during the past year lost by death two Resident Members, the Hon. R. G. Hazard and Dr. Henry F. Walker: five have resigned and five have been dropped automatically for arrears in dues. Mr. William Dutcher has been transferred from the Resident to the Honorary List, and four new Resident and three new Corresponding Members have been elected. The membership list now stands: Resident, 81; Corresponding, 28; Honorary, 4; total, 113.

Eleven papers of some length have been presented before the Society,—five on birds, three on the general zoölogy of expeditions to the tropics, two on anthropology and one on whaling. In addition, there have been eight brief papers,—seven on birds, one on snakes. The papers were illustrated with lantern slides, Museum specimens, charts, etc.

On December 11 was issued the Society's "Abstract" Nos. 28-29 under one cover, 114 pages and 6 plates, containing the minutes of the two years ending March 13, 1917, and "Natural History Observations from the Mexican Portion of the Colorado Desert," by Robert Cushman Murphy.

At the annual election of officers, the present President, Vice-President and Treasurer were unanimously reëlected to serve for the ensuing year. Dr. Dwight thanked the Society for its long-continued choice of him as President. The Secretary was nominated for reëlection, but declared his desire to be relieved of the duties of that office owing to his imminent liability to service in the Army and the many things to be done before he should be called. He nominated as Secretary Mr. J. T. Nichols. After discussion, the vote taken resulted in the reëlection of the Secretary.

The Secretary read a list of the four Corresponding and eleven Resident Members known or believed by him to be devoting all their working time to army or other war work.

Mr. Davis read extracts from a letter from Mr. Brower, telling of the difficulty of collecting cicadas of several species at Willard, Mo., last August, because the Yellow-bill Cuckoos (*Coccyzus a. americanus*) would so often catch the insects when flushed. Mr. Davis exhibited a box of one species (*Tibican auletes*) from Willard, one of which had the thorax nearly bitten away by a Cuckoo. Mr. Brower wrote that he

had had to throw stones at these birds, ordinarily so shy, to drive them away from his chase. He saw one evidently going in search of a cicada it heard singing. He had also seen a Red-head Woodpecker (*Melanerpes erythrocephalus*) catch and eat one.

Mr. Rogers showed the cutting claw of an American Lobster he had picked up on Long Beach, February 22, which measured 11.9 inches from the proximal spur, 12.2 in. over all.

Mr. T. Gilbert Pearson entertained the Society with an account of some of the experiences of his boyhood in central Florida. He spoke particularly of the changes wrought in the bird-life by man. With the planting of Swamp Oaks about houses and along the roads, the Loggerhead Shrike (*Lanius l. ludovicianus*) became almost at once a common breeding species. On a recent visit to the same spot, he found the original, wonderful pine forest entirely swept away, and of the once numerous birds of the pines—Sparrow Hawks (*Falco sparverius*), Red-cockaded Woodpeckers (*Dryobates borealis*), Brown-headed Nuthatches (*Sitta pusilla*), etc.,—hardly an individual remained, their places taken by the Shrikes, Brown Thrashers (*Toxostoma rufum*) and other birds of the hammocks in probably greater numbers than the former population; the Florida Blue Jay (*Cyanocitta cristata florincola*) especially, was in extraordinary abundance. The myriads of the heron tribe that had inhabited the swamps had practically vanished. Mr. Pearson closed with an account of the closing chapter in the career of the last wolf of that region, who was brought to justice after devouring all of Br'er Rabbit's children, as related by Uncle Remus.

Bird-Notes from Florida

BY JOHN TREADWELL NICHOLS

March 28 to April 21, 1917, I had the pleasure of spending in Florida as the guest of Mr. Herman Armour Nichols, of Chicago. Almost this entire time (March 31 to April 20) we were cruising among the keys between Miami on the east and Sanibel Light on the west coast in an auxiliary ketch, the "Yuma," and as a result there was little opportunity to observe land birds, and no great number of species were listed, although it was a critical date in the spring migration. Nevertheless, after eliminating what is covered by available literature there remain among my notes observations on several species which seem worth placing on record.

Larus argentatus. HERRING GULL.—About 20 south of Sanibel Light, April 10, almost or all in juvenal plumage. Presumably they do not leave until early May, as at points further north.

Phalacrocorax auritus floridanus. FLORIDA CORMORANT.—Under date of April 2, off Man-of-war-hawk Bush, my notes read: "A school of porpoises breaking not far from our anchorage. Three or four cormorants following them closely, swimming and making short flights, diving close after them." Mr. H. A. Nichols tells me this is a common habit of the Florida cormorant. Perhaps in this manner, they secure pieces of fish left by the porpoises.

Pelecanus occidentalis. BROWN PELICAN.—On a Key southeast of Cape Sable, there were young pelicans of various ages on April 14.

I quote an interesting note given me by Dr. Russell J. Coles concerning the habits of this bird on the southwest coast of Florida.

In his article, Harpooning Devilfish, Col. Theodore Roosevelt in Sept., 1917, issue of *Scribner's Magazine*, correctly describes the method of diving of the Brown Pelican when he says that they dive down wind and come to the surface up-wind. The reason for this is that while the Brown Pelican is a very heavy bird, it is so exceedingly buoyant under water (on account of its heavy and oily covering of feathers and a network of air-cells under the skin of its breast) that it is necessary for it to drop from a considerable height. When these birds are feeding, the distance of their flight above the surface of the water is carefully regulated by the depth at which the fish are swimming and one, who has not especially studied this point by many careful observations, does not realize how accurately this is gauged. I have often seen a Brown Pelican suddenly dart forward and upward ten to fifteen feet higher and circle back over his prey before making his plunge, indicating that the fish was swimming at a greater depth than expected.

The plunge is interesting in that it is always headed down wind. As it thrusts its neck down, its wings are three-quarters closed and extended backward as far as possible, thus throwing the center of gravity in front of any wing support, and the following wind instantly catches in the partly closed wing tips and completes the inversion, then by deft manipulation of its almost closed wings, it maintains its perpendicular position as it volplanes downward.

It is necessary for such a heavy bird to rise against the wind, therefore it is only a case of instinctive preparedness that the Brown Pelican always rises to the surface headed up-wind, in order to be ready for instant flight.

Owing to the buoyancy of the Brown Pelican it bounds out of the water so suddenly that it requires critical observation to note what part of the bird first appears above the surface, but after many hundreds of careful observations, I can say that no general rule will apply; frequently the top of the head first appears, but rather more often a partly closed wing, thrown forward (as if it had been used under water in heading the bird up-wind) is first seen, and almost at same instant top of head is seen. Only in very rare instances in which it is indicated that the Pelican tried to reach a greater depth than its plunge justified, have I seen its tail rise above the surface first.

The feeding habits of the Brown Pelican differ greatly from those of its somewhat larger and more attractive looking relative, the White Pelican. The White Pelican does not drop from aloft and plunge beneath the surface of the water, but its usual manner of feeding is much like that of a Goose or Swan, by wading or swimming (usually in shallow water) and finding its varied food among the weeds and sand of the bottom, or by catching fish by suddenly darting its neck forward.

The Brown Pelican roosts in trees usually. The White Pelican usually roosts on sand bars rising just above the surface of the water. The Brown Pelican is very destructive to food fishes and a source of

great annoyance to fishermen.* The White Pelican does very little damage to food fishes.

Dr. Coles' principal claim against the Brown Pelican is that they often scatter schools of fish around which the fishermen are about to place their nets, and thus interfere seriously with the fishing industry. This may prove a serious indictment, although I do not believe that the actual destruction of fish by a bird like the Pelican will ever be found to interfere with the commercial supply.

Mergus serrator. RED-BREASTED MERGANSER.—Mergansers tolerably common, five flying northeast, Sandy Key, April 16. Probably all *serrator*, which species definitely identified Sandy Key, April 1, Lostman's River, April 4.

Ardea occidentalis. GREAT WHITE HERON.—Rather common among the Keys south and east of Cape Sable, stragglers as far away as the railroad northeast of Long Key, and Ten Thousand Islands on the West coast. One or two *wuerdmanni* with the Great White Herons, and one in Marco Pass. *Ardea herodias* is frequently associated with them, but they seem more specialized in their habits and habitat than that bird, feeding on the extensive mostly submerged sand-bars. The glaring white light over these bars (which I have seen exceeded nowhere in the world) is in keeping with their white plumage.

Their legs and feet are usually a strong dull yellow in color, a conspicuous field mark in the right light or at close range, but one does not often see them at close range for they are extremely wary. A young fully feathered bird not quite old enough to fly, April 15, had legs and feet dull dark pinkish, bill dull yellow, lores grey-blue, iris yellow. (Plate I, fig. 2.)

Pelidna alpina sakhalina. RED-BACKED SANDPIPER.—Two or three in lead-colored plumage with Sanderlings and small plovers, beach about 12 miles south of Sanibel Light, April 9. There is no mention of Florida in the A. O. U. checklist's statement of this bird's winter range.

* Studies by the National Association of Audubon Societies now in progress do not seem to bear out this statement.—J. M. J.

Cathartes aura septentrionalis. TURKEY VULTURE.—Common. In keeping with my previous experience on actual sea-coasts, no Black Vultures were seen among the Florida Keys, etc. These latter were common at St. Augustine and northward along the railroad.*

Myiarchus crinitus. CRESTED FLYCATCHER.—Sandy Key, April 1, one, silent. Tolerably common, and noisy, later on the west coast.

Corvus brachyrhynchos pascuus. FLORIDA CROW.—A few, Sandy Key and elsewhere. No sign of the Fish Crow which I think is the common crow further north in Florida, inland.*

Icterus spurius. ORCHARD ORIOLE.—Marco, April 6, three males; Sandy Key, April 16, two or three males. One or two individuals seen or heard at other points. According to the A. O. U. check-list "occasional in southern Florida and Cuba in spring migration." In view of my limited opportunity for observing land birds, and the different occasions on which Orchard Orioles were noted, I believe the species to be a common spring migrant on the Florida southwest coast. Chapman's Handbook gives April 29 as the date of its arrival at Washington.*

Passerculus sandwichensis savanna. SAVANNAH SPARROW.—Beach about 12 miles south of Sanibel Light, April 9, two or three.

Ammodramus savannarum australis. GRASSHOPPER SPARROW.—One aboard the "Yuma," Bay of Florida, April 1, also one aboard at Lostman's River, April 4. Although not taken, these birds were examined at as close range as desired, and seemed identical with the species in the north, the under parts full as buffy. They were certainly in migration, as otherwise their presence aboard a boat lying off shore could not be accounted for. (See lighthouse records, Cooke, Bird Lore, 1910, p. 14.)

Guiraca cærulea cærulea. BLUE GROSBEAK.—One, Sandy Key, April 16. (Cooke gives April 14, Tortugas, *Bird Lore*, 1911, p. 198.)

* See note p. 26.

- Piranga erythromelas.** SCARLET TANAGER.—One or two, Sandy Key, April 16. (Arrives at Washington, April 17, according to Chapman's Handbook.)*
- Piranga rubra rubra.** SUMMER TANAGER.—Two or three, Sandy Key, April 16. (Arrives at Washington, April 18, according to Chapman's Handbook.)
- Hirundo erythrogaster.** BARN SWALLOW.—Keys southeast of Cape Sable, April 14 and 15, three single birds flying north.*
- Iridoprocne bicolor.** TREE SWALLOW.—Bay about 12 miles south of Sanibel Light, April 10, about 10 flying north.*
- Vermivora pinus.** BLUE-WINGED WARBLER.—One, Sandy Key, April 16. According to the A. O. U. Check-list a "very rare migrant in southeastern United States south of Virginia." Perhaps, like the Orchard Oriole, less rare here than supposed. So few warblers were observed that the chances of there having been a rare one among them seems slight.
- Vermivora peregrina.** TENNESSEE WARBLER.—One, Sandy Key, April 13 (Chapman, Warblers of N. A., gives April 26 for Rising Fawn, Ga.) According to the A. O. U. check-list "occasional in Florida." See remarks under *pinus*.
- Dendroica coronata.** MYRTLE WARBLER.—One at Lower Metacumbe April 18. This may be near the date of its departure for the North.*
- Dendroica palmarum palmarum.** PALM WARBLER.—Rather common. Lower Metacumbe, April 18, 4 or 5. This may be near the date of its departure for the North.* No Yellow Palms were observed.
- Dendroica discolor.** PRAIRIE WARBLER.—Common and generally distributed, in song in the Mangroves on the west coast.*
- Wilsonia citrina.** HOODED WARBLER.—One, Lower Metacumbe, April 18. The Check-list makes no direct reference to this bird's status in Florida.

* See note p. 26.

Setophaga ruticilla. REDSTART.—One, Sandy Key, April 1; and Lower Metacumbe, April 18 (Chapman, Warblers of N. A.; gives April 3 for the earliest date Southern Florida Lighthouses.)

Troglodytes aëdon aëdon. HOUSE WREN.—One in song, Miami, March 30. One heard singing, Long Key, March 31, Keys southeast of Cape Sable, April 15. One seen Marco, April 7. As this bird arrives at Washington, April 13, the time for it to leave this, its winter range, was probably approaching.*

Hylocichla fuscescens fuscescens. WILSON'S THRUSH.—One, Sandy Key, April 16. (Cooke gives April 28 as the earliest at Key West, *Bird Lore*, 1907, p. 33.)

Birds observed which were likely approaching the end of their winter stay in Florida are Herring Gull (April 10), Red-breasted Merganser, Savannah Sparrow (April 9), Myrtle Warbler (April 18), Palm Warbler (April 18), House Wren (April 15).

No indication of a wave of transients comparable to that which reaches the latitude of New York in early May, was noted until on April 16, at Sandy Key off Cape Sable. Here, where a few days before there had been comparatively few birds, a large number of land species were listed in only a few minutes available (including Orchard Oriole, Blue Grosbeak, Indigo Bunting (*Passerina cyanea*), both Tanagers, Red-eyed Vireo (*Vireosylva olivacea*), Prothonotary (*Protonotaria citrea*), Blue-winged, Cape May Warblers (*Dendroica tigrina*), Wilson's Thrush).

I would never have supposed that the Prairie Warbler would be, as it was, the common noisy, migrant passerine bird in the mangroves, though it both breeds and winters in the state. It was also interesting to find the Crested Flycatcher so much in evidence, probably southern nesting individuals.

Birds which from their check list range-status one would scarcely have expected to find in so casual a survey, are the Orchard Oriole, Blue-winged, Tennessee and Hooded Warblers. Perhaps species whose ordinary northward route lies further

* See note p. 26.

west may be commoner in spring on outlying westerly Keys than elsewhere in the state.

One's first meeting with a species of bird in nature always has much personal interest, and is also often one's most vivid impression of the bird. Perhaps I will be pardoned for speaking here of some of the southern birds whose acquaintance I made on this trip.

On March 29 there was a male Painted Bunting (*Passerina ciris*), gaudy with blue hood, golden-green back and red rump and under parts, about the shrubbery in front of the Royal Palm Hotel at Miami, so excessively restless and active that it was very difficult to get a fair look at him.

On April 1, while skirting the edge of some Mangroves at Sandy Key, two Yellow-crowned Night Herons (*Nyctanassa violacea*) flew out ahead for a short distance and disappeared around a corner behind the trees. Their resemblance in build and flight to the Black-crowned Night Heron accentuated the foreignness of their uniform leaden plumage, and striped black and white heads.

My first Pileated Woodpecker (*Phlæotomus pileatus pileatus*) was on April 3 at the edge of a small isolated Key, Man-of-war-hawk Bush, a splendid black, red-crested bird with white stripes on the head and neck and extensive conspicuous white pattern showing in the wing in flight. Later I saw them and

* Through the courtesy of Dr. and Mrs. G. Clyde Fisher, I am able to compare the above with a table kept by them at De Funiack Springs, northwest Florida, about twenty-five miles north of the Gulf of Mexico, March to May, 1909. De Funiack Springs is situated in a sandy upland pine-woods country more or less under cultivation. This table shows Turkey and Black Vultures about equally common. Great-crested Flycatcher a common breeder arriving March 29. Crows not numerous, both species (*brachyrhynchus* and *ossifragus*) present, *C. brachyrhynchus* the more frequent. Orchard Oriole a common breeder arriving March 23. Scarlet Tanager arriving April 10, Summer Tanager, April 2, Barn Swallow, in greatest numbers on May 4, and Tree Swallow still present May 5. Myrtle Warbler observed as late as May 4. The latest Palm Warbler (*D. p. palmarum*) on April 22. The Yellow Palm Warbler (*D. p. hypochrysea*) about equally common with the above, latest April 17. Both races wintered. The Prairie Warbler scarce, recorded only twice, in April. The House Wren recorded only twice, April 15 and 16.

Bird Temperatures

BY JAY A. WEBER

Anyone who has experienced a temperature of 103 degrees or more, is in a position to know the amount of suffering such an abnormal temperature causes to the human body. I was therefore, very much surprised some years ago when I took the temperature of a warbler which registered 108.2 degrees. At that time I was under the impression that the bird was diseased and suffering dreadful pain and torture. I obtained many temperature records since, and find that the temperature mentioned appears to be quite normal among the perching birds. Most of the records were obtained while collecting birds for scientific purposes. To obtain a bird's temperature the bulb of the thermometer was inserted through the mouth well into the bird's body immediately after it had been shot. In the case of live birds the bulb was inserted into the rectum.

When a live specimen is handled in order to obtain its temperature considerable excitement is apparent in the bird, which may have some effect on its temperature, and likewise the shock at the time a bird is shot may have some effect. Until satisfactory experiments have been completed, I cannot rest assured that the temperatures hereafter stated represent the *normal* temperatures of the species mentioned. No attempt is made to draw conclusions from the records obtained, as they are considered too incomplete.

BIRD TEMPERATURES. (Fahrenheit)

Thrushes

Bluebird (*Sialia s. sialis*) 107, 107, 108.5.

Robin (*Planesticus m. migratorius*) 108.2, 108.8, 109.2.

Hermit Thrush (*Hylocichla guttata pallasi*) 109.9.

Olive-backed Thrush (*Hylocichla ustulata swainsoni*) 109.2.

Grey-cheeked Thrush (*Hylocichla a. aliciae*) 110.4.

Veery (*Hylocichla f. fuscescens*) 108.2, 108.4, 109.

Wood Thrush (*Hylocichla mustelina*) 109.

Creepers

Brown Creeper (*Certhia familiaris americana*) 106.4.

Wrens

Long-billed Marsh Wren (*Telmatodytes p. palustris*) 107.3, 107.3.

Thrashers, etc.

Brown Thrasher (*Toxostoma rufum*) 109.6.

Catbird (*Dumetella carolinensis*) 107.

Wood Warblers

Redstart (*Setophaga ruticilla*) 107.8.

Canadian Warbler (*Wilsonia canadensis*) 108.8, 108., 108.6.

Hooded Warbler (*Wilsonia citrina*) 107.1.

Yellow-breasted Chat (*Icteria v. virens*) 109.5, 108.6.

Yellow-breasted Chat, Juv. (*Icteria v. virens*) 108.2.

Maryland Yellowthroat (*Geothlypis t. trichas*) 108.2, 108.2.

Connecticut Warbler (*Oporornis agilis*) 108.6.

Water-thrush (*Seiurus n. noveboracensis*) 108.3, 108.9, 109.2.

Yellow Palm Warbler (*Dendroica palmarum hypochrysea*) 107.5.

Pine Warbler (*Dendroica v. vigorsi*) 109.1.

Black-throated Green Warbler (*Dendroica virens*) 109.4, 107.4.

Blackburnian Warbler (*Dendroica fusca*) 108.6.

Black-poll Warbler (*Dendroica striata*) 109.8, 108.5, 108.4.

Magnolia Warbler (*Dendroica magnolia*) 107.8.

Black-throated Blue Warbler (*Dendroica c. caerulescens*) 108.2.

Cape May Warbler (*Dendroica tigrina*) 107.6.

Blue-winged Warbler (*Vermivora pinus*) 107.7, 107.7.

Vireos

Blue-headed Vireo (*Lanivireo s. solitarius*) 106.8.

Red-eyed Vireo (*Vireosylva olivacea*) 108.5, 108.1.

Waxwings

Cedar Waxwing (*Bombycilla cedrorum*) 107.1.

Swallows

Tree Swallow (*Iridoprocne bicolor*) 106.5.

Tanagers

Scarlet Tanager (*Piranga erythromelas*) 109.2, 108.3, 107.8.

Sparrows

Indigo Bunting (*Passerina cyanea*) 108.2, 107.8.

Rose-breasted Grosbeak (*Zamelodia ludoviciana*) 108.2, 108.2.

Towhee (*Pipilo e. erythrophthalmus*) 110.7, 109.5, 108.7.

Swamp Sparrow (*Melospiza georgiana*) 108.4.

Song Sparrow (*Melospiza m. melodia*) 111.

Bachman's Sparrow (*Peucaea aestivalis bachmani*) 106.8.

Slate-colored Junco (*Junco h. hyemalis*) 110.2, 109.6.

Field Sparrow (*Spizella p. pusilla*) 109.2.

Sharp-tailed Sparrow (*Passerherbulus caudacutus*) 109.2.

House Sparrow (*Passer domesticus*) 108.5.

Blackbirds, etc.

Baltimore Oriole (*Icterus galbula*) 108.7, 108.2.

Red-winged Blackbird (*Agelaius p. phæniceus*) 109.3, 109.1,
109.

Cowbird (*Molothrus a. ater*) 108.4.

Crows and Jays

Crow (*Corvus b. brachyrhynchos*) 106.

Blue Jay (*Cyanocitta c. cristata*) 109.

Flycatchers

Least Flycatcher (*Empidonax minimus*) 108.6.

Acadian Flycatcher (*Empidonax virescens*) 107.

Wood Pewee (*Myiochanes virens*) 110.2.

Phoebe (*Sayornis phoebe*) 109.5.

Crested Flycatcher (*Myiarchus crinitus*) 109.6, 111.2, 108.6,
108.6.

Kingbird (*Tyrannus tyrannus*) 109.5, 108.4, 109.2.

Swifts

Chimney Swift (*Chaetura pelagica*) 106.1, 106.

Woodpeckers

Northern Flicker (*Colaptes auratus luteus*) 109.6.

Red-headed Woodpecker (*Melanerpes erythrocephalus*) 108.

Yellow-bellied Sapsucker (*Sphyrapicus v. varius*) 107.4.

Cuckoos

Black-billed Cuckoo (*Coccyzus erythrophthalmus*) 109.1.

Yellow-billed Cuckoo (*Coccyzus a. americanus*) 109.8, 108.2.

Owls

Barred Owl, Juvs. (*Strix v. varia*) 102.6, 102.6.

Hawks

Sharp-shinned Hawk (*Accipiter velox*) 108.2.

Shore Birds

Black-bellied Plover (*Squatarola squatarola*) 108.9.

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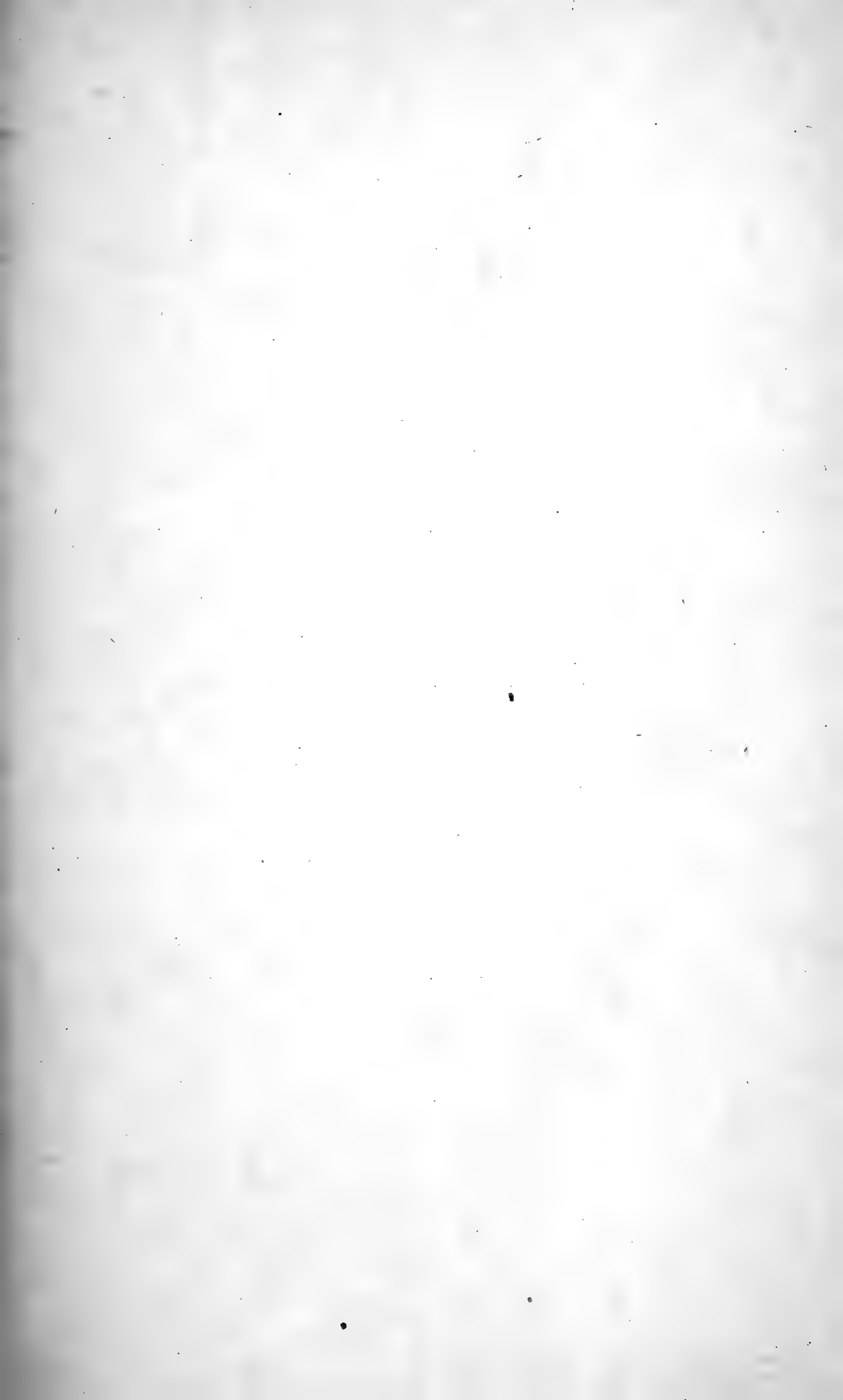
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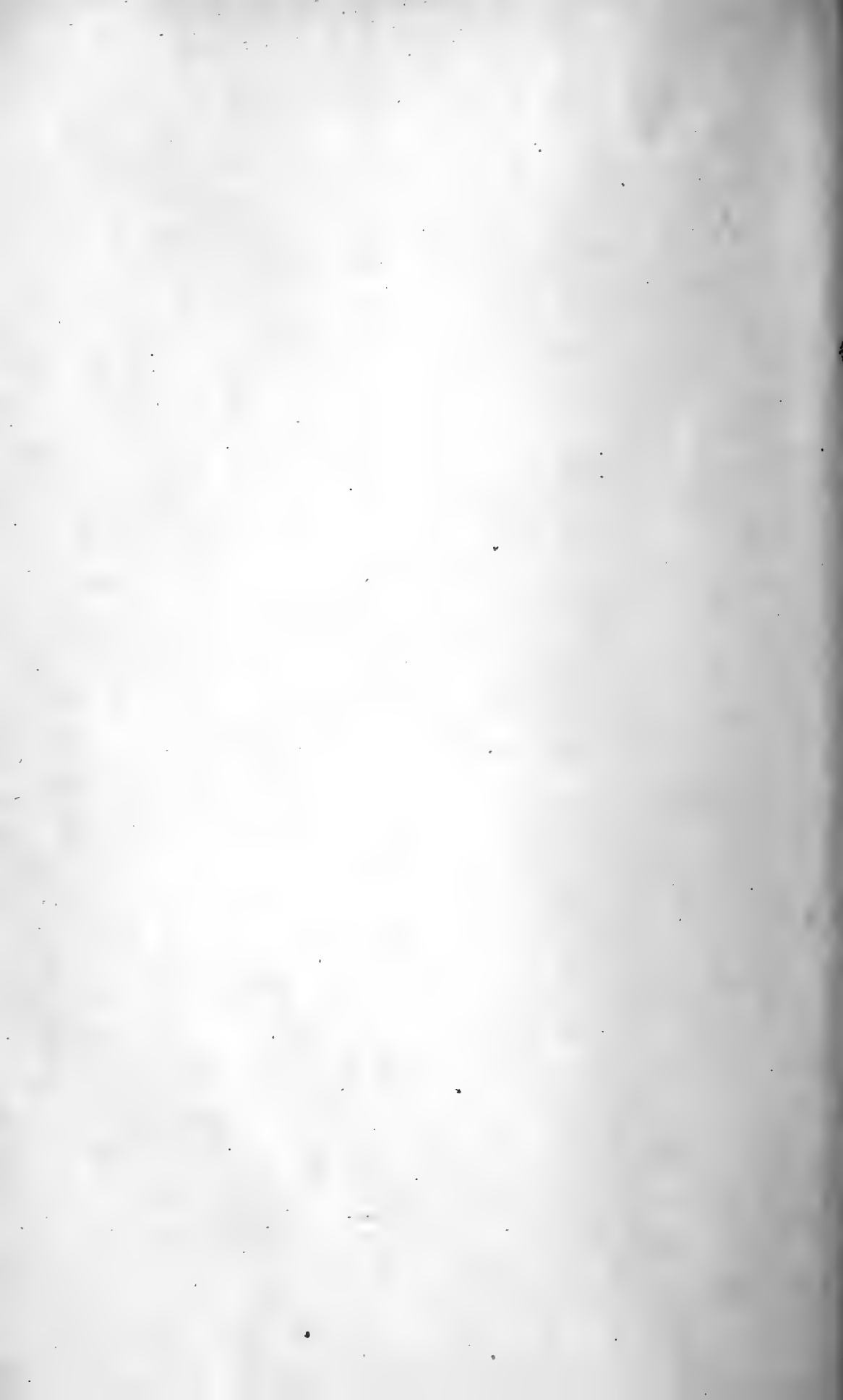
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- No. 15, for the year ending March 10, 1903, } 70 pages. 2 plates. Out of print.
No. 16, " " " " " 8, 1904, }
- FIELD NOTES ON THE BIRDS AND MAMMALS OF THE COOK'S INLET REGION OF ALASKA. J. D. Figgins.
SOME NOTES ON THE PSYCHOLOGY OF BIRDS. C. William Beebe.
SOME APPARENTLY UNDESCRIBED EGGS OF NORTH AMERICAN BIRDS. Louis B. Bishop.
- No. 17, for the year ending March 14, 1905, }
No. 18, " " " " " 27, 1906, } 136 pages, 2 plates, 75 cents.
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- A LIST OF THE BIRDS OF LONG ISLAND, N. Y. Wm. C. Braislin.
- No. 20, for the year ending March 10, 1908, }
No. 21, " " " " " 9, 1909, } 122 pages, 14 plates, \$1.00.
No. 22, " " " " " 8, 1910, }
No. 23, " " " " " 14, 1911, }
- BIRD'S-NESTING IN THE MAGDALEN ISLANDS. P. B. Philipp.
THE BIRD COLONIES OF PAMLICO SOUND. P. B. Philipp.
A LIST OF THE FISHES KNOWN TO HAVE OCCURRED WITHIN FIFTY MILES OF NEW YORK CITY. John Treadwell Nichols.
- No. 24, for the year ending March 12, 1912, } 156 pages, 22 plates, \$1.00.
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- THE RED-WINGED BLACKBIRD: A STUDY IN THE ECOLOGY OF A CAT-TAIL MARSH. Arthur A. Allen.
AN INTERESTING ORNITHOLOGICAL WINTER AROUND NEW YORK CITY. Ludlow Griscom.
- No. 26, for the year ending March 10, 1914, } 49 pages, 35 cents.
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- No. 28, for the year ending March 14, 1916 } 114 pages, 6 plates, \$1.00.
No. 29, " " " " " 13, 1917 }
- NATURAL HISTORY OBSERVATIONS FROM THE MEXICAN PORTION OF THE COLORADO DESERT. Robert Cushman Murphy.
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BIRD-NOTES FROM FLORIDA. John Treadwell Nichols.
BIRD TEMPERATURES. Jay A. Weber.

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1918-1919

NO. 31

ABSTRACT

OF THE PROCEEDINGS OF THE

LINNÆAN SOCIETY

OF

NEW YORK

For the Year Ending

March 11, 1919

CONTAINING

Bird-Banding by Means of Systematic Trapping

By S. PRENTISS BALDWIN

Date of Issue, December 23, 1919

Officers of the Linnæan Society

OF NEW YORK

1918-1919

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The Society meets on the second and fourth Tuesday evenings of each month, from October to May inclusive, at the American Museum of Natural History, 77th Street and Central Park West, New York City.

ABSTRACT
OF THE PROCEEDINGS OF THE
LINNÆAN SOCIETY
OF
NEW YORK,
FOR THE YEAR ENDING MARCH 11, 1919.

THIS is the thirty-first in the series of *Abstracts* published by the Linnæan Society of New York, and, like the preceding issues, is prepared mainly as a brief review of the work of the Society during the year closing with the date indicated above. Papers presented before the Society and published elsewhere (often enlarged or otherwise different in form) are mentioned with proper reference to the place of publication.

March 26, 1918.—The President in the chair. One Corresponding Member (Mr. Seton), twenty Resident Members (Dr. Dwight, Dr. Fisher, Dr. Janvrin, and Messrs. Breder (elected later), Cleaves, Davis, Gladden, Granger, Hartshorn (elected later), Hix, F. E. Johnson, J. M. Johnson, Marks, McMahon, Murphy, J. T. Nichols, L. N. Nichols, Rogers, Thayer and Weber) and 209 (!) visitors present.

The President declined the Honorary Membership to which he had been elected at the Annual Meeting, as the Society's By-Laws allow only Resident Members to hold office.

Mr. H. Ira Hartshorn and Mr. Charles M. Breder, Jr., whose names had been proposed at the previous meeting, were elected to Resident Membership.

The Secretary read a letter from Mr. Charles Johnston recording his close observation of a singing male Pine Warbler

(*Dendroica v. vigorsi*) at Beachwood, two miles southeast of Toms River, N. J., on March 19, an early date.

Mr. Ernest Thompson Seton gave the Society a lecture on "Wild Animals at Home." He first illustrated the tracks of various familiar birds and mammals and explained the differences between the tracks of arboreal and terrestrial members of both classes, and of wild and domesticated forms of *Canidæ* and *Hominidæ*; and showed how stories of some length could be read in detail from the records left in mud or snow. The speaker also told some tales of experiences with a number of western mammals, large and small. The lecture was illustrated with lantern-slides.

April 9, 1918.—The President in the chair. Eleven members (Dr. Dwight and Messrs. Gladden, Hartshorn, Hix, F. W. Hyde, J. M. Johnson, Marks, J. T. Nichols, L. N. Nichols, Rogers and Weber) and three visitors (Messrs. Roger N. Baldwin, B. Talbot B. Hyde and Manson Valentine) present.

The name of Mrs. Victor M. Reichenberger, now for two years a volunteer worker in the bird department of the American Museum, was proposed for Resident Membership by Mr. Rogers; it was referred to the Membership Committee.

Mr. J. T. Nichols reported for a committee consisting of himself and Mr. Granger, which had been appointed by the President to audit the Treasurer's Annual Report, that the Report had been "examined and found correct as stated."

The President appointed the following committees to serve for the ensuing year:

Membership, Messrs. J. M. Johnson, Hix and Weber.

Finance, Messrs. Woodruff, Granger and Weber.

Papers and Lectures, Messrs. Rogers, Granger and Murphy.

Publications, Messrs. Rogers, J. M. Johnson and J. T. Nichols.

Bird-Banding, Messrs. Cleaves, J. T. Nichols and Rogers.

Bird-Census Blanks, Messrs. Weber, Cleaves, J. T. Nichols and Rogers.

Mr. J. M. Johnson recorded apparently the first Old-squaw

(*Harelda hyemalis*) from the Overpeck Creek, N. J., a male seen there by him April 7. Thereabouts on the same day he had seen a Rough-legged Hawk (*Archibuteo lagopus sanctijohannis*) and a Short-eared Owl (*Asio flammeus*),—a late date for each.

Observers who had been in the field agreed that the cool weather had slowed up the migration and that birds were now generally scarce. Mr. J. T. Nichols, however, had noted a Robin (*Planesticus m. migratorius*) gathering nest-material as early as April 7.

Mr. Rogers exhibited the American Museum's collection, recently acquired from the Massachusetts Agricultural College, of domestic Mallards (*Anas platyrhynchos*) and Brown Leghorn Fowl (*Gallus gallus*) which had undergone experiments in the way of removal or transference of their sexual glands, and pointed out the remarkable results of such operations. He also told of similar experiments on mammals and on insects.

April 23, 1918.—The President in the chair. Thirteen members (Dr. Dwight, Dr. Janvrin, and Messrs. Breder, Gladden, Granger, Hartshorn, Hix, J. M. Johnson, Lang, Marks, J. T. Nichols, L. N. Nichols and Rogers) and nine visitors (including Dr. Wm. K. Gregory, Dr. J. Bequaert, Mrs. Granger, Mr. Charles Johnston, Mr. E. G. Nichols and Mr. Manson Valentine) present.

Mrs. Victor M. Reichenberger, whose name had been proposed at the previous meeting, was elected to Resident Membership.

Mr. J. T. Nichols told of a Duck Hawk (*Falco peregrinus anatum*) which killed a Pigeon (*Columba livia*, domestic) in the air between the fish department and bird department windows of the American Museum on April 11; and Dr. Dwight told of a recent attack by a Sparrow Hawk (*F. s. sparverius*) on a Starling (*Sturnus v. vulgaris*) in the same place, the latter escaping, though well mauled.

Dr. Janvrin reported finding a Black Duck (*Anas rubripes*) nest with twelve eggs at Long Beach, Nassau County, L. I., on April 14.

Dr. Gregory gave the Society a lecture "On the Motor Apparatus of Land Reptiles." With lantern-slides and with skeletons of reptiles fossil and recent, the speaker traced the development of the musculature of the hind-limbs and of the fore-limbs of reptiles from the earliest times to the present. Considerable discussion followed.

May 14, 1918.—The Vice-President in the chair. Thirteen members (Dr. Janvrin and Messrs. Breder, Gladden, Granger, Hartshorn, J. M. Johnson, Lang, J. T. Nichols, L. N. Nichols, Rogers, Thayer, Weber and Woodruff) and five visitors (including Mr. H. van Straaten of Holland and Java, and Mr. William Beebe) present.

Mr. Weber reported collecting a singing male Bachman's Sparrow (*Peucaea aestivalis bachmani*) at Fort Lee, N. J., on May 9.

Mr. Johnson reported the following records for the Englewood Region: in the Overpeck Marshes,—American Bittern (*Botaurus lentiginosus*), 1 on April 23, 1 on April 28, 4 on May 5; (Greater?) Scaup (*Marila marila?*), 9 on April 28; American Pipit (*Anthus rubescens*), 36 on May 5; Merganser (probably American, *Mergus americanus*), 1 on May 12; and in the Phelps Ruins grove a Long-eared Owl (*Asio wilsonianus*) on April 28. He also recorded a Florida Gallinule (*Gallinula g. galeata*) in Prospect Park on May 9.

Several of the members spoke of the arrival of Tennessee and Cape May Warblers (*Vermivora peregrina* and *Dendroica tigrina*) in numbers which indicated no diminution in their comparative abundance attained in recent years.

Mr. Rogers told of seeing a Pigeon Hawk (*Falco c. columbarius*) in Central Park April 28; and, with Mr. van Straaten on May 12, one of the white-winged Gulls (*Larus hyperboreus* or *L. leucopterus*) on the New Jersey side of the Hudson below Dyckman Street, and many Least Sandpipers (*Pisobia minutilla*) scattered through the Overpeck Marshes.

Mr. J. T. Nichols recorded an exceedingly tame King Rail (*Rallus elegans*) at Mastic, L. I., May 12.

Mr. Thayer started a discussion on the nude in ornithology.

He said it had been his experience that shy birds were often easy to approach closely by a man without the customary clothing. Several other members mentioned having had the same experience or having read of such on good authority.

Mr. Thayer gave the Society a talk on his "Field Notes on the Birds of Trinidad." With his father, Mr. Abbott H. Thayer, he had spent two and a half months on the island some years ago, months crowded with the most active collecting and observing. He told the Society of his adventures in an Oil-bird (*Steatornis caripensis*) cave and of his experiences with many other interesting birds, such as *Nyctibius*, *Jacana*, *Aramus*, *Hapalocercus* (which he was the first to discover in Trinidad), etc. The talk was illustrated with specimens.

May 28, 1918.—The President in the chair. Ten members (Dr. Dwight and Messrs. Davis, Gladden, Granger, Hix, J. M. Johnson, Lang, Marks, J. T. Nichols and L. N. Nichols) and ten visitors present.

In the absence of the Secretary on war duty, the President appointed Mr. J. T. Nichols Acting Secretary.

Mr. Johnson reported that the annual Mid-May Census by Messrs. W. DeW. Miller and Charles H. Rogers in the Plain-field, N. J., region, on May 18, and one by himself alone the following day at West Englewood, N. J., had yielded a smaller number of species than ordinarily, 87 and 71 respectively. This spring, migrating mixed flocks of Warblers, etc., had been notably absent. He explained this, at least partially, by the uniform temperatures, with few really warm days until recently, so that the birds had been neither stimulated to advance in waves, nor held up in our latitude by cold weather. On May 26 at Long Beach, L. I., with Dr. Janvrin and Mr. van Straaten, he had observed Black Ducks (*Anas rubripes*) breeding, a Short-eared Owl (*Asio flammeus*), unusually large numbers of Ruddy Turnstones (*Arenaria interpres morinella*) and Black-bellied Plover (*Squatarola squatarola*)—200 of the former by actual count, and probably 300 or 400 of each present, ten White-rumped Sandpipers (*Pisobia fuscicollis*), twenty Red-backed Dunlin (*Pelidna alpina sakhalina*), and the common small shore-birds in moderate numbers.

Mr. L. N. Nichols had observed a (late) Hermit Thrush (*Hylocichla guttata pallasii*) May 18, in Bronx Park, and a Mourning Warbler (*Oporornis philadelphia*) May 26 at Fort Lee, N. J. He spoke of the scarcity of the Ovenbird (*Seiurus aurocapillus*) and Chipping Sparrow (*Spizella p. passerina*) in Bronx Park,—the abundance of the latter species at Hempstead, where he had recently visited a colony of Purple Martins (*Progne s. subis*), was in marked contrast.

The paper of the evening was by Dr. J. Bequaert on the habits of social insects. The habits of insects can be divided into two categories, the first having to do with self-preservation, the second with reproduction. In habits of the first category, the emphasis is on individualism, in those of the second, on altruism, which latter principle finds its highest development and becomes the dominant force in social insects. The habits of insects are not fixed, but in process of change and evolution.

Social insects, the dominant insects of today, belong to two unrelated groups,—firstly, the Termites, a very ancient group known as fossils from the Eocene and probably descended from the Roaches of the Cretaceous; secondly, several divisions of the Hymenoptera, namely, Ants, Wasps and Bees. The Termites have no known living relatives, and their social habits had probably a different origin from those of the unrelated Hymenoptera; at least, there are important differences in their social relations, in that the sterile workers are of both sexes instead of being all females as in the Hymenoptera. Of the Hymenoptera, the Ants are probably the most ancient. In them, as in the Termites, there remain no non-social species. In the Wasps, on the other hand, evolution is traceable from non-social to decidedly social species by gradual steps, easily explained. At the conclusion of his paper, Dr. Bequaert showed lantern-slides of the nests of Termites, Ants and Wasps, and pointed out interesting habits of various species.

October 8, 1918.—The President in the chair. Eight members (Dr. Dwight, Dr. G. C. Fisher, Dr. Janvrin, and Messrs. Breder, Marks, J. T. Nichols, L. N. Nichols and Pearson)

and a former member (Mr. G. K. Noble) and two other visitors present.

In view of the death of Mr. Walt F. McMahon, who left the National Association of Audubon Societies on March 15 to enter the National Army, saw active service in a Machine-Gun Company in France, and was the first member of the Linnæan Society to fall in the present war, killed while on scout duty August 28, Mr. Pearson proposed the following resolution, which was adopted by the Society:

WHEREAS, by the death of Walt F. McMahon, while serving his country in France, the Linnæan Society has sustained an irreparable loss, therefore

Be it resolved, that the Linnæan Society extend to the bereaved parents its sincere sympathy, and that a copy of this resolution be spread upon the minutes.

Dr. Fisher reported that on September 21, at Douglaston, L. I., he and Mrs. Fisher had observed a male Chaffinch (*Fringilla cælebs*), probably an escaped cage-bird, and on the same day, at Alley Pond, a female or immature male Wood Duck (*Aix sponsa*), which was noted at the same place on September 22 and October 6. On August 14 he had found a Hermit Spadefoot (*Scaphiopus holbrooki*) in his cellar at Douglaston, which was still alive in captivity.

Dr. Dwight and others spoke of a flight of Hawks of different kinds reported from the neighborhood of New York toward the end of September, and noted as far away as Washington, D. C., by Sgt. C. H. Rogers, the Secretary of the Society, now stationed at Camp Meade, Md.

The Red-breasted Nuthatch (*Sitta canadensis*), which had been almost completely absent during the season of 1917-'18, had appeared this autumn, as noted by Dr. Janvrin and Mr. J. T. Nichols. Dr. Janvrin had observed it in Central Park on two occasions, the earlier being September 10, and at Darien, Conn., September 22.

The paper of the evening was by Mr. T. Gilbert Pearson, "Notes on the Feeding-Habits of the Brown Pelican." Mr. Pearson had made a trip during June to the Gulf coast of Louisiana, Texas and Florida, to obtain first-hand information on the economic status of this bird (*Pelecanus occidentalis*).

After careful counts, he estimated about 65,000 adult birds on the entire Gulf coast of the United States, of which perhaps two-thirds of those breeding were on islets near the mouth of the Mississippi, and most of the remainder in Florida, there being comparatively few on the Texas coast. There were notably few fishes on the Texas coast, but Gulf Menhaden (*Brevoortia tyrannus patronus*) were excessively abundant about the mouth of the Mississippi. Samples of the fishes on which the Pelicans were feeding were obtained from those disgorged by adults and young, and later identified by the United States Bureau of Fisheries. The Pelicans off the mouth of the Mississippi were feeding exclusively on Gulf Menhaden, those on the coast of Florida, south of Tampa, on a variety of species. The Thread Herring (*Opisthonema oglinum*) greatly predominated, others being Gulf Menhaden, Common Mullet (*Mugil cephalus*), Pigfish (*Orthopristis chrysopterus*), Pinfish (*Lagodon rhomboides*) and Crevalle (*Caranx hippos*).

Birds of particular interest which Mr. Pearson had observed on this trip were a colony of Reddish Egrets (*Dichromanassa rufescens*), with unfamiliar, honking cries, on a chain of islets off the Texas coast, and in the same vicinity the Scissor-tail Flycatcher (*Muscivora forficata*) and Great-tail Grackle (*Megaquiscalus major macrurus*), the latter with different notes from the Boat-tail (*M. m. major*). Fishermen on the Texas coast were discarding Mullet and shipping sea Catfish to the Kansas City market, which would not take the former fish.

October 22, 1918.—The President in the chair. Twelve members (Dr. Dwight, Dr. G. C. Fisher, Dr. Janvrin, and Messrs. Bowdish, Gladden, Hix, E. F. Hyde, Marks, J. T. Nichols, L. N. Nichols, Pearson and Philipp) and two visitors present.

A letter was read which the President had received from Mr. S. P. Baldwin, of Cleveland, relative to the work that gentleman had done in bird-banding, and the work of the American Bird-Banding Association. Mr. Baldwin advocated the extensive trapping of birds for banding purposes

as giving a higher percentage of return records than ordinary casual banding, as most of it is carried on.

Mr. Pearson introduced a discussion of the note of the Long-eared Owl (*Asio wilsonianus*) by imitating a short, plaintive, near-whistled cry he had heard from a company of four Owls at Essex, N. Y., about July 10, with which almost none of his ornithological friends had been familiar, but which Dr. Fisher had also heard. Dr. Fisher spoke of having first heard this note at Branchville, N. J., on the evening of August 3, and of having found next morning a Long-eared Owl in the tree where it had been heard, and another not far away. Mr. Bowdish said that for five or six years he had had one or more of these Owls near his house in Demarest almost daily from about December first till the end of March, and had never heard a note from them. The probability that the note referred to was a summer call, possibly of the young, was discussed.

Mr. Gladden spoke of having observed a Barn Swallow (*Hirundo erythrogaster*) flying back and forth among the dead limbs of a tree, apparently picking insects from their under surfaces as it did so, near Tuxedo, N. Y., on August 4.

The paper of the evening was by Mr. P. B. Philipp, entitled "Nesting Warblers in New Brunswick." In a New Brunswick locality with which he and Mr. Bowdish are familiar, they had actually found the nests of sixteen species of Warblers (*Mniotiltidæ*), and had noted as doubtless breeding five other species:

Black and White Warbler (*Mniotilta varia*)

Nashville Warbler (*Vermivora rubricapilla rubricapilla*)

Tennessee Warbler (*V. peregrina*)

Northern Parula Warbler (*Compsothlypis americana usneæ*)

Cape May Warbler (*Dendroica tigrina*)

Yellow Warbler (*D. æstiva æstiva*)

Black-throated Blue Warbler (*D. cærulescens cærulescens*)

Myrtle Warbler (*D. coronata*)

Magnolia Warbler (*D. magnolia*)

Bay-breasted Warbler (*D. castanea*)

Black-poll Warbler (*D. striata*)

Blackburnian Warbler (*D. fusca*)
 Black-throated Green Warbler (*D. virens*)
 Yellow Palm Warbler (*D. palmarum hypochrysea*)
 Ovenbird (*Seiurus aurocapillus*)
 Northern Waterthrush (*S. noveboracensis noveboracensis*)
 Louisiana Waterthrush (*S. motacilla*)
 Maryland Yellowthroat (*Geothlypis trichas trichas*)
 Wilson's Warbler (*Wilsonia pusilla pusilla*)
 Canada Warbler (*W. canadensis*)
 American Redstart (*Setophaga ruticilla*)

The nests of the rarer species—Tennessee, Cape May, etc.—were described in detail, and the talk was illustrated with specimens of nests and eggs.

November 12, 1918.—The President in the chair. Ten members (Dr. Dwight, Dr. G. C. Fisher, Dr. Janvrin, and Messrs. Gladden, Hix, Marks, J. T. Nichols, L. N. Nichols, Pearson and Weber) and five visitors (including Mr. William Palmer) present.

A Boy Scout present, Albert Pinkus, who had captured a Saw-whet Owl (*Cryptoglaux a. acadica*) in Central Park on November 5 and brought it to the Museum, reported having photographed another at the same place on November 11, about six feet up in some bushes, and showed the negative. Mr. Gladden raised the question as to how well the Saw-whet Owl could see in daylight. He was of the impression that it could not see well. A general discussion followed on the ability of Owls to see by day. It was generally agreed that the Barn (*Aluco pratincola*), Barred (*Strix varia*), Screech (*Otus asio*) and Horned (*Bubo virginianus*) Owls could see very well in the day-time, the only adverse evidence being contributed by Mr. L. N. Nichols who had boyhood memories of Screech Owls which were much more readily alarmed at night than by day. It was agreed that the Saw-whet Owl was very inactive by day and allowed a close approach, so that it sometimes could be taken in the hand, but the general experience was that it seemed to see rather well and would elude capture in most cases at the last moment. Mr. Weber

spoke of a Screech Owl he had had confined for about a year in his cellar and for which he had merely set out liver about once a week. At the end of the year the bird was in excellent physical condition in spite of its continued residence in the dark cellar, and was liberated.

Dr. Janvrin told of observing several Greater Shearwaters (*Puffinus gravis*) at Long Beach, L. I., on October 20, two or three of them very close to shore

Mr. Pearson said that in the South the farmers sometimes had larger crops of peanuts than they cared to harvest and after such times would frequently in winter turn the hogs into the peanut fields to fatten on peanuts left in the ground, and that Turkey Vultures (*Cathartes aura septentrionalis*) would assemble and eat the excrement of the hogs. This observation was prompted by instances brought up by several members, of birds in captivity apparently killing themselves by over-eating, and the deduction that in a state of nature at certain seasons birds were on very limited rations.

Mr. Weber spoke of a flight of the Pine Siskin (*Spinus p. pinus*) at Fort Lee, N. J., about the middle of October, flocks of a few to as many as twenty birds having been observed, and Mr. J. T. Nichols reported a few Siskins at Mastic, L. I., first noted November 2, later than the species customarily appears there in autumns when it is abundant.

The paper of the evening was by Dr. Dwight on the Turnstones (*Arenaria*), illustrated by specimens of the European Turnstone (*A. interpres interpres*), Ruddy Turnstone (*A. i. morinella*) and Black Turnstone (*A. melanocephala*). He also showed a specimen of the related Surfbird (*Aphriza virgata*). The Black Turnstone, quite a different species from the others, has a much more limited migration and range, a strip on the Pacific coast of America. Dr. Dwight took the view-point that the European and Ruddy Turnstones were a single species breeding in circumpolar regions and migrating to the Southern Hemisphere, so that in the course of the year its distribution was cosmopolitan. Adults of the American form of *A. interpres*, in nuptial plumage, are decidedly redder than the Old World form, and constitute a fair geographic

race, although there is sufficient variation of redness in birds breeding in the same general locality to make it at times difficult to determine to which race a specimen should properly be assigned, and autumn and young birds are not readily, if at all, distinguishable. Mr. Wm. Palmer, who had revised the species several years ago, took a different viewpoint. He considered that the Turnstone had been forced southward by the ice of the Glacier Period, separating those birds that had migrated down the Atlantic coast of Europe, Atlantic coast of America, and Pacific coast of Asia (including those that struck across the Pacific to Oceania) into three forms, which, so far as known, were still isolated and did not intergrade, and might well, therefore, be considered distinct species. Considerable general discussion followed.

November 26, 1918.—In the absence of President and Vice-President, Mr. Walter Granger took the chair. Eight members (Dr. Janvrin and Messrs. Bowdish, Granger, Marks, J. T. Nichols, Quarles, Weber and Woodruff) and six visitors (including Dr. W. G. VanName) present.

Dr. Janvrin reported two Barn Swallows (*Hirundo erythrogaster*) flying westward at Long Beach on the day of the meeting. One of the birds had been observed at close range, and there could be no doubt of their identity.

Dr. Van Name had observed Shearwaters on the two occasions when he had visited Long Beach this autumn. There was a strong, steady inshore wind on both days. On October 6, he observed three or four; one came in very close over the surf and was identified fairly satisfactorily as Cory's Shearwater (*Puffinus borealis*). On the 27th, many Shearwaters were observed, certainly more than a dozen and perhaps several times that number; only one came in very near, identified with reasonable certainty as a Greater Shearwater (*P. gravis*).

The Acting Secretary submitted a record which had been handed him of a Pine Grosbeak (*Pinicola enucleator leucura*) observed at Sand's Point, L. I., November 23, by Mr. Laidlaw Williams; and also read data which he had received from Mr. Wm. T. Helmuth, a member of the Society, now on Naval Service, as follows:

"First. Mr. Helmuth and his brother (Mr. J. L. Helmuth) have furnished what seems to be the most southerly record of the Iceland Gull (*Larus leucopterus*), a bird which they observed at very close range from about ninety miles off Cape Lookout down to off Cape Fear. This was in the season of 1917-'18, about February 24.

"Secondly. At about 44° N., 32° W., October 22, about 480 miles northwest of the Azores, Shearwaters of the *Puffinus borealis-kuhli* type tolerably common.

"Thirdly. At 41°22' N., 46° W., a point not far north and west of midway between Montauk and Spain, about 600 sea miles southeast of Newfoundland, far outside of soundings, and in the extreme northern edge of the Gulf-Stream drift (just where the southward currents which sweep around Newfoundland and its banks extend furthest to the southeastward), on October 28 of this year Kittiwakes (*Rissa t. tridactyla*) were abundant, more in juvenal than in adult plumage; easily 200 Fulmars (*Fulmarus g. glacialis*) were seen; Greater Shearwaters (*Puffinus gravis*) were tolerably common in flocks and Mother Carey's Chickens (probably the Leach's Petrel, *Oceanodroma leucorhoa*) were abundant. On the previous day a very few Kittiwakes and Fulmars had been noted two or three hundred miles southeast of this locality, and the Mother Carey's Chickens had been noted in small numbers for two days and three or four hundred miles to the eastward. On the succeeding day, three or four hundred miles to the west-southwest, Kittiwakes and Mother Carey's Chickens were present in diminished numbers; there were no Fulmars. The Greater Shearwaters were seen only on the 28th.

"Fourthly. On November 1, about 100 miles off the Virginia Capes (at the western edge of the Gulf Stream), about 150 Pomarine Jaegers (*Stercorarius pomarinus*) were seen. The previous day, further east, there had been a few, and with them a still smaller number of the Parasitic Jaeger (*S. parasiticus*), and a few Pomarines had been noted October 26 and 27 equidistant between Montauk and Spain. On November 1 the most easterly Herring Gulls (*Larus argen-*

tatus), about ten, were noted, also the following land birds: a Mourning Dove (*Zenaidura macrura*), Osprey (*Pandion haliaëtus*), Red-winged Blackbird (*Agelaius phœniceus*), Meadowlark (*Sturnella magna*), Junco (*Junco hyemalis*) and Robin (*Planesticus migratorius*)."

The paper of the evening was by Mr. Beecher S. Bowdish, "Notes from a New Jersey Feeding Station." Mr. Bowdish showed photographs of a number of birds which he had been accustomed to feed for a number of years at his home at Demarest, N. J., and outlined the various methods of attracting birds about the house. Among those that had visited his feeding-shelf was a strange Fringillid, probably the European Greenfinch (*Chloris chloris*), which had come to the shelf for a month or more one summer. He had heard of the liberation of some of these birds at White Plains, N. Y., and surmised that this accounted for his unusual guest.

December 10, 1918.—The President in the chair. Ten members (Dr. Dwight, Dr. Janvrin, and Messrs. Gladden, Granger, J. M. Johnson, Marks, L. N. Nichols, Philipp, Pearson and Weber) and eight visitors (including Messrs. J. T. S. Hunn, G. K. Noble, Morris Pell and Valentine) present.

In the absence of the Acting Secretary, the Chair appointed Mr. T. Gilbert Pearson as Secretary *pro tem*.

Mr. Morris Pell stated that several American Egrets (*Herodias egretta*) were noted at Shinnecock Bay, L. I., from August 14 to September 1, and that in recent years they had occurred there regularly each summer. He also spoke of a number of Hudsonian Curlew (*Numenius hudsonicus*) and Caspian Terns (*Sterna caspia*) observed at the same place.

The paper of the evening was by Mr. Walter Granger, who spoke of his observations on the birds of southern Colorado, made especially in Huerfano Basin during the summer of 1918.

Following this very delightful presentation, Mr. Johnson spoke at length on his observation of bird-life in the West, and Mr. Pearson gave some miscellaneous notes on the birds

as he had observed them in the neighborhood of Tucson, Arizona.

ABSTRACT SUBMITTED BY MR. GRANGER

Observations were made in the Huerfano Basin, Col., mostly during the breeding season (June 15 to August 31) and principally from one camp which was occupied during this period. Huerfano Basin is some twenty miles in diameter, lying at the eastern base of the Sangre de Christo Mts., and is nearly surrounded by mountains running up to 10,000 or 12,000 feet. The center of the Basin is at about 7,000 feet. The environment is mostly arid cedar and pinyon country with cottonwoods, willows, etc., along the Huerfano River and some of its affluents. There is a narrow strip of cultivation along these streams, devoted mostly to alfalfa.

Sixty-three species were noted, all land birds but one, the Killdeer (*Oxyechus vociferus*). Turkey Vultures (*Cathartes aura septentrionalis*) were observed in small flocks following a group of men engaged in poisoning prairie dogs, the Vultures feeding on the dead animals without apparent harm to themselves. Townsend's Solitaires (*Myadestes townsendi*) were seen in some numbers and in full song out in the open Basin in September and October, having come down from their breeding range high in the mountains. Mourning Doves (*Zenaidura macrura carolinensis*) were observed nesting from early in June until the last week in August. A peculiar accident happened to a female Western Mockingbird (*Mimus polyglottus leucopterus*) which had a nest near the camp. It was observed one day lying in distress on the ground near the nesting tree. Examination showed that the lower mandible had been thrust down through the skin of the breast, and the bird was unable to withdraw it because the incision was so high up. The mandible was withdrawn by hand and the bird fluttered off into the underbrush and was not seen again. A suggestion of the cause of this accident was that the bird while sitting in the nest and preening its breast feathers had caught the tip of the needle-pointed bill in the skin while the head was in a strongly-flexed position and had been unable to free it, and that in struggling the bill had been forced through the skin.

January 14, 1919.—The President in the chair. Eleven members (Dr. Dwight, Dr. G. C. Fisher, Dr. Janvrin, and Messrs. Bowdish, Fleischer, Gladden, Granger, Marks, J. T. Nichols, L. N. Nichols and Philipp) and twelve visitors (including Messrs. Bennett, C. L. Lewis, Jr., E. G. Nichols, G. H. Stuart, 3d, of the Delaware Valley Ornithological Club, and J. M. Valentine) present.

The following names were proposed for Resident Membership by Mr. L. N. Nichols: Mr. Clark L. Lewis, Jr., of 524

West 184th Street, Mr. J. Manson Valentine of 118 East 79th Street, and Mr. Edward G. Nichols, of 1086 Amsterdam Avenue; they were referred to the Membership Committee.

Mr. Fleischer spoke of the scarcity of birds, especially of water-fowl, at Long Beach this winter. He and Mr. J. M. Johnson had been there on January 1.

Mr. Lewis spoke of Pipits (*Anthus rubescens*) associated with both races of the Horned Lark (*Otocoris alpestris alpestris* and *O. a. pratincola*) on the parade ground at Van Cortlandt Park about November 15.

Mr. E. G. Nichols gave the following data for species wintering this year: December 29, Van Cortlandt Park, Vesper Sparrow (*Poæcetes g. gramineus*); January 3, Clason Point, New York City, Killdeer (*Oxyechus vociferus*) flock of six, Cowbird (*Molothrus a. ater*), Red-winged Blackbird (*Agelaius phœnicus*), Chipping Sparrow (*Spizella p. passerina*) and Towhee (*Pipilo e. erythrophthalmus*).

The paper of the evening was by Mr. L. Nelson Nichols: "The Summer Birds of Cranberry Lake, N. Y." Cranberry Lake is in St. Lawrence County in the outskirts of the Adirondacks. The observations presented covered a period of eight years, including dates between July 31 and September 13. As at that time of year transients must have been present, there was no certainty that all the species mentioned were breeding. Noteworthy items in the list were the scarcity of Red-winged Blackbirds (*Agelaius ph. phœniceus*), although it would seem to be a locality favorable for them. Swallows are uncommon about the Lake until late in August and then they may come in hundreds or thousands, to remain only two or three days before disappearing. A remarkable record was of four Tree Sparrows (*Spizella m. monticola*) recorded August 16, 1915. This species breeds much further north and ordinarily does not arrive in migration until late in the autumn.

In the discussion that followed the presentation of the paper, the probability of error in the identification of the Tree Sparrows was raised.

January 28, 1919.—The President in the chair. Eighteen

members (Dr. Dwight, Dr. G. C. Fisher, Dr. Janvrin, and Messrs. Bowdish, Chubb, Davis, Gladden, Granger, Hix, LaDow, Lang, Lewis, Marks, E. G. Nichols, J. T. Nichols, L. N. Nichols, Philipp and Valentine) and fifteen visitors (including Mr. W. DeW. Miller) present.

Messrs. Clark L. Lewis, Jr., Edward G. Nichols and J. Manson Valentine, whose names had been proposed at the preceding meeting, were elected to Resident Membership.

The Acting Secretary read correspondence with Mr. Howard H. Cleaves relative to the publication of his report of the American Bird-Banding Association. After some discussion, a motion was passed empowering the Publication Committee to print the report of Mr. Baldwin's records in the next *Abstract* if Mr. Cleaves's complete report were not submitted by the date when the *Abstract* was ready to go to press.

Mr. Wm. T. Davis showed a photograph of an Osprey (*Pandion haliaëtus carolinensis*) nest on the ground, occupied in 1917 and 1918 on Long Beach, off Orient, L. I. This was thought to be the only ground nest on record except those on Gardiner's Island.

Mr. Granger showed the skull of a Woodchuck (*Marmota monax*), brought to the Museum recently by Mr. Ernest Ingersoll, in which the incisor teeth had undergone remarkable abnormal growth from failure to meet and wear against one another in the normal manner.

Mr. Hix reported three White-tailed Deer (*Odocoileus virginianus*), including two bucks, at Jones Road, near Englewood, N. J., on November 17, 1918.

The paper of the evening was by Mr. Waldron DeWitt Miller, "Remarks on the Woodpeckers." The speaker suggested that the true Woodpeckers (*Picidæ*) with stiffened tails be divided into two subfamilies, the specialized Ivory-bills (*Campephilinæ*) and the others (*Picinæ*) which are less specialized. In his opinion, the zygodactyl foot of the *Picinæ* is not, as popularly supposed, a scansorial adaptation, but an inheritance of a similar foot from birds of perching habits similar to the Barbets (*Capitonidæ*). In the Ivory-bills the foot is not zygodactyl, but all the toes point more or less for-

ward or at least sideways (to the outside). This results in a position of the small first toe unique among birds, directed more or less forward on the *outside* of the foot. The speaker had observed in Nicaragua that the local Ivory-bill (*Phlæoceastes guatemalensis*) clung to the tree with the entire tarsus appressed, and showed less tendency to stand upward or outward on its legs than less-specialized Woodpeckers. The different position of the toes in the Ivory-bills is reflected in a different configuration of the lower end of the metatarsus, showing it to be a deep-seated character. It is correlated with other high specializations, as the very powerful bill, and a different form of tail, the latter having four central feathers (which are of the same length) with narrowed and stiffened barbs. *Dryobates*, though belonging to the *Picinae*, shows an approach to the *Campephilinae*; in life the second and first toes are very movable and often spread so as to project rather sideways than backward, but assume the backward position completely when relaxed and shrunken in a prepared skin. Mr. Miller reviewed the components of the Ivory-bill group, and called attention to certain species in the New and in the Old World which were mimicked in plumage by entirely unrelated Woodpeckers, *e.g.*, *Phlæoceastes* by *Ceophlæus*. After adjournment, he demonstrated at close range and showed to the members present the series of skins with which his talk had been illustrated.

February 11, 1919.—The President in the chair. Sixteen members (Dr. Dwight, Dr. Janvrin, and Messrs. Breder, Gladden, Granger, Hix, J. M. Johnson, Lewis, Marks, R. C. Murphy, E. G. Nichols, J. T. Nichols, L. N. Nichols, Rogers and Valentine) and eight visitors present.

The Secretary read a letter from Mr. T. G. Pearson, enclosing a circular descriptive of the proposed Roosevelt Memorial Fountain, and suggesting that the Linnæan Society contribute toward it, as it was hoped that all scientific societies would do. After discussion by the President and others, it was voted to lay the matter on the table.

Mr. Johnson remarked at the unfortunate jumping at con-

clusions which caused many nature-lovers to attack persons apparently guilty of wanton destruction of wild life, without first taking pains to learn the real facts. He had learned by experience, and gave a noteworthy example, that a courteous inquiry was likely to yield better results than an attack based on one-sided evidence.

Mr. R. C. Murphy gave the evening's paper, "New Developments in the Utilization of Fisheries Products." He took up in turn a remarkable number of sharks, fishes and cetaceans, already or becoming extensively used as human food and in other ways. He spoke particularly of how the whaling industry, which formerly wasted such a large percentage of each animal captured, now, impelled by law, discarded hardly more than is wasted of a hog in a modern packing-house. The venture of putting the Spined Dogfish (*Squalus acanthis*) on the market as food had proved successful, and other species of shark were likely to follow it to the table. Leather was being procured from an increasing number of kinds of shark, and experiments were being made in the use of leather from other sources, such as the skin of whale's intestine. Samples of several of the new leathers were passed around in illustration.

February 25, 1919.—The President in the chair. Eighteen members (Dr. Dwight, Dr. G. C. Fisher, Dr. Janvrin, and Messrs. Bowdish, Breder, Cleaves, Granger, Griscom, Hix, Lewis, Marks, E. G. Nichols, J. T. Nichols, L. N. Nichols, Philipp, Rogers, Thayer and Valentine) and twelve visitors present.

Mr. J. T. Nichols proposed for Resident Membership the name of Mr. Howarth S. Boyle, of the bird department of the American Museum; it was referred to the Membership Committee.

Mr. Griscom recorded seeing an adult Glaucous Gull (*Larus hyperboreus*) off the Battery, New York City, on February 10. Mr. Thayer remarked that he had seen a Gull of one of the white-winged species at Long Beach last year as late as June 23, and spoke also of the increase in the number of Piping Plover (*Ægialitis meloda*) nesting on Long Beach (he

had seen at least a dozen pairs on the date mentioned), and of how the tiny chicks froze when alarmed, while those a bit older ran: He had seen five Least Terns (*Sterna antillarum*) there on May 29. Both he and Mr. J. T. Nichols mentioned the remarkable lateness of last year's northward shore-bird migration, and the latter quoted Mr. E. P. Bicknell as seeing the last northbound Semipalmated Plover (*Ægialitis semipalmata*) and the first southbound Least Sandpipers (*Pisobia minutilla*) on the same date in early July.

Mr. L. N. Nichols recorded the Towhee (*Pipilo e. erythrophthalmus*) wintering in East Bronx as still present February 13.

Mr. J. T. Nichols read notes comparing the birds seen at Mastic, L. I., February 16 and 17, 1918, after an exceptionally severe winter, with those seen February 22 and 23, 1919, after an exceptionally open one, with remarks on the behavior of certain species as winter residents and as transients.

Mr. J. T. Nichols also gave the paper of the evening, on "The Voices of Shore-Birds." Years of taking advantage of unusual opportunities for the study of this group as transients on Long Island, N. Y., had made the speaker familiar with the notes used under those circumstances. He now gave a résumé of what he had learned of the language of each of our local species,—the use and significance of their various cries, with speculation on homologies (cases of the evident relationship of common origin between the notes of allied species) and analogies (notes, of different species, having the same significance though they may or may not be homologous). Whistled imitations of the notes discussed, illustrated the talk.

March 11, 1919.—Annual Meeting. The President in the chair. Twenty-three members (Doctors Dwight, G. C. Fisher, Janvrin, Morris; Mrs. Reichenberger; Messrs. Bowdish, Boyle, Breder, Davis, Granger, Hartshorn, Hix, F. W. Hyde, F. E. Johnson, J. M. Johnson, Lang, Marks, J. T. Nichols, Pearson, Rogers, Thayer, Weber, Valentine) and thirteen visitors present. This meeting followed immediately the

Society's Seventh Annual Dinner, held in the Mitla Room of the American Museum and attended by twenty-four members (as above, less Mr. Valentine and plus Mr. Murphy and Mr. Woodruff) and fourteen guests.

Mr. Howarth S. Boyle, whose name had been proposed at the previous meeting, was elected to Resident Membership.

The name of Mr. Gladwyn Kingsley Noble, a former member of the Society and now in the herpetology department of the American Museum, was proposed by Mr. Nichols for Resident Membership; it was referred to the Membership Committee.

In the absence of the Treasurer, his Annual Report was read by the Secretary; it showed a balance of \$2,597.21 to the Society's credit, which was about \$150 greater than the balance of a year ago.

The Secretary then read his Annual Report, as follows:

During the past year the Linnaean Society has held fifteen meetings—the second December meeting was omitted owing to its falling on Christmas Eve—with a total attendance of 525. The Sixth Annual Dinner was attended by twenty-one Resident Members and seventeen guests, and these members and eighteen visitors were present at the Annual Meeting the same evening. At the remaining fourteen meetings the total attendance averaged thirty-five, that of members thirteen, both figures a decided increase over those of the preceding year. The largest number present at any one meeting was 230, on March 26 (of members, twenty-one); the smallest was eleven.

The Society has during the past year lost by death one Corresponding Member, Colonel Theodore Roosevelt, and two Resident Members, Mr. Gerard Beekman and Mr. Walt F. McMahon; one has resigned, and seven new ones have been elected. The membership list now stands: Resident, 85; Corresponding, 27; Honorary, 4; total, 116.

Fourteen papers have been presented before the Society, chiefly on birds. The papers were illustrated with lantern-slides, museum specimens, charts, etc.

On September 18 was issued the Society's *Abstract of Proceedings* No. 30, 38 pages and a plate, containing the minutes of the year ending March 12, 1918, and "Bird-notes from Florida," by Mr. J. T. Nichols, and "Bird Temperatures," by Mr. J. A. Weber.

CHARLES H. ROGERS,
Secretary.

The question of making a contribution toward the Roosevelt Memorial Fountain was taken from the table, and Mr. Pearson was called upon to describe the project, which he did. Mr. J. M. Johnson moved that a contribution of \$200 be made from the Society's Treasury. After considerable discussion, including the proposal of an amendment to make the sum \$100, this motion was carried as made.

Mr. Hix reported the first Mourning Cloak (*Euvanessa antiopa*) of the season on March 1 along the Palisades, and Mr. Nichols another at Garden City the following day.

Mr. Bowdish spoke of the scarcity of Myrtle Warblers (*Dendroica coronata*) in the Englewood Region during the past winter; he had seen none till March 9.

The report of the bird-banding work of Mr. S. P. Baldwin was read by title, "Bird-Banding by Means of Systematic Trapping."

The Secretary said he had tried to get several members who had been in the Army or Navy to tell of birds seen while in the Service, but had found only Mr. Boyle and himself able to be present. The latter told about birds seen about Augusta, Ga., during the summer of 1918, including Red-cockaded Woodpeckers (*Dryobates borealis*), Summer Tanagers (*Piranga r. rubra*), Mockingbirds (*Mimus p. polyglottus*), Brown-headed Nuthatches (*Sitta pusilla*) and others which frequented the pines among the tents of Camp Hancock, and a Lark Sparrow (*Chondestes grammacus*) on September 1 and a Western Sandpiper (*Ereunetes mauri*) September 8, both seen close to Camp. He also described a strange meeting-place evidently used regularly by scores of Black Vultures (*Catharista u. urubu*) in the dense woods along the Big Horse Creek in nearby South Carolina. Mr. Boyle said that while he had been for sixteen months stationed at Naval Base Hospital No. 1 at Brest, his work had been too confining to allow of much natural-history observation. Among other things, however, he mentioned the apparent complete lack of albinism and melanism among the House Sparrows (*Passer d. domesticus*) thereabouts, in contrast to their frequency in and about New York City.

Bird-Banding by Means of Systematic Trapping

BY S. PRENTISS BALDWIN

WITH PHOTOGRAPHS BY A. W. MOLLER, THOMASVILLE, GA., AND
THE AUTHOR

About the year 1913 I began a diligent campaign against the House Sparrow, on my farm, at Gates Mill, near Cleveland, Ohio, using the so-called Government Sparrow Trap, which catches the birds alive and unharmed.

The Sparrows were destroyed in large numbers, and the farm pretty well cleared of them, greatly to the comfort, evidently, of the native birds; for it was very noticeable that, as the Sparrows decreased in number, the native birds greatly increased. The result was most satisfactory, and the traps should be recommended to all who are interested in attracting native birds to their vicinity.

But, it was when I learned of the American Bird-Banding Association that the traps acquired a new and much greater significance, for, as the House Sparrows decreased, the traps became the resort of various kinds of native birds.

In the spring of 1914 I began placing bands, not only upon young birds in the nest, but upon many adults secured from the traps, and by 1915 it became evident that this could be done on a large scale, and with most interesting results in returned birds.

Probably some members of the Banding Association have been discouraged from banding young birds in the nest, when, season after season, they get few reports from their birds; and it has seemed to me that banding, itself, has failed to attain proper recognition, from ornithologists, because the results were necessarily few and scattering.

Much greater returns from trapping: During the last four years I have placed nearly sixteen hundred bands, and, during that time, I have received, from outside sources, only three reports; one, a Robin, banded in Ohio and taken in South

Carolina; one, a Sparrow Hawk, taken fifteen miles away from where it was banded; and one, a Flicker, taken two miles distant. But, during that time I have retaken by trap, from one year to another, more than sixty birds, and some of those have been taken not only the second, but also the third and fourth years. In five weeks, in Thomasville, Georgia, in 1917, I recorded 25 birds from 1916 and six from 1915.

Birds not frightened away by the trapping; "Repeats": The birds regard the trap as a special feeding table, and come to it day after day. I have released the same bird three times in one hour; I have frequently released the same bird four or five times in one day; and I coined the word "repeats" to distinguish, in my notes, these birds from "new." "Repeats" are so numerous that of nearly seven hundred birds handled in five weeks, in Georgia, two-thirds were "repeats" and only one-third "new." One Brown Thrasher, on two successive spring seasons in Georgia, spent most of every day in the trap. And a Cardinal became such a nuisance, by getting into the trap and keeping others away, that I moved the trap to another location. In summer one may keep almost daily record of certain Song Sparrows nesting nearby, and in migrations one may know the day an individual bird comes, and the day he moves on. One learns to know the characters of certain individuals, as I came to know a certain White-throated Sparrow, who always identified himself by fighting and biting my fingers; and another White-throat, who distinguished himself as a squealer.

How much time or trouble? In presenting the following report, as the result of four or five years' effort, it is only fair to explain how little time and how scattering an effort has been possible to the writer.

The work at Gates Mill, near Cleveland, has been carried on during five summer seasons; but I do not go to the farm until some time in the month of May, or first of June, after all spring migration is over; then by mid-July I am usually gone for an absence of six weeks; and then return to the farm for September and October. This limits the work to six weeks of nesting time in spring, and perhaps two months in

the autumn, at a time when many birds have formed flocks or started southward. Not only is the Ohio work thus limited, but when living on the farm, I am in the city three days a week, so, with stormy days or other things to interfere, I can run the traps only two or three days in a week.

The work at Thomasville, Georgia, has been carried on for only three seasons, 1915, 1916 and 1917. From three to five traps are run on every clear day, and I can give them very regular attention, but my whole season at Thomasville is, usually, only five weeks of February and March.

I explain with so much detail the rigid restrictions under which these observations were made, because I have realized so fully that my best opportunities for steady and consistent observation are repeatedly lost by my long absences.

I urge this upon the bird student who may consider these methods of work, for it is certain that any person who lives all the year in one place, in the country, or on the edge of town, can obtain much greater scientific result with much less effort, than my haphazard work costs me.

While this report includes only the "Returns" of birds taken from one year to another, it is evident that not less important, to a person who operates traps at the same place all of a season, or all of a year, is the opportunity, by this method, of keeping in touch with the daily life of birds living in the vicinity; of knowing just when they come; just when young leave the nest; just how long they remain in the vicinity; and when they leave; and watching the exact movements of individual birds during migration. Indeed, the careful observer, in a fixed location, may obtain facts of greater scientific value on the daily records than from the reports from year to year.

How to trap: Bait the ordinary sparrow-trap with cracked grain and bread. The grain should be ground fine, what is usually sold as the finest or first chick food, and scattered thinly to a distance of five feet from the trap. The soft parts of the bread may be very finely divided by rolling in the hands, but save the crusts and larger pieces and drop them inside the trap.

My experience shows that a bird has a good eye for the largest piece, and a group of birds, instead of picking up the fine particles outside the trap, will push eagerly into the trap to the large pieces. (See figure 1.)

Bait: Of course, many varieties of birds will not come to a grain and bread diet, though I have been surprised to find such birds as Myrtle and Palm Warblers, and even Red-bellied Woodpeckers, coming freely to such a bait. I have drawn Cedar Waxwings with Ligustrum berries, in Georgia, but failed to trap them, probably because of a great abundance of fruit on the bushes nearby. Robins we have not taken for lack of proper bait, but, no doubt, they can be taken with some care in the use of Mulberries or other fruits, when fruit is not too abundant on the trees.

There is much to be done in providing proper baits to secure other kinds of birds, but I have not had time to experiment in it.

Speaking of baits, the best attraction to draw House Sparrows is to leave a couple of Sparrows in the trap; but I do not leave other birds in the trap, to draw their fellows, because of the danger of injury to a bird remaining in the trap long.

Guard fence: It is absolutely necessary to place a guard fence around each trap to keep the neighbors' pet dogs and cats at a distance. These animals will surely find the trap and torment the captured birds if it is unprotected. A piece of chicken net fence three feet high, and about 60 feet long, will make a circular pen about 20 feet in diameter, in which to place the trap. (See figure 1.)

Other trapping methods: Of course, many trapping methods are well known, but I wish to call attention to a simple trap door, which may be used on boxes, for Wrens, Bluebirds, and other birds nesting in boxes or holes in trees. (See figure 2.)

A small piece of zinc is so bent upon a piece of wire, that it serves as a perch; the wire is loosely tacked to the box with staples, and is so bent that a thread may be fastened upon the end of the wire. A pull on the thread closes the perch up against the entrance. With a couple of staples this trap



FIG. 1.—SCATTERING BAIT AT STATION C, THOMASVILLE, GEORGIA. (See page 26.)

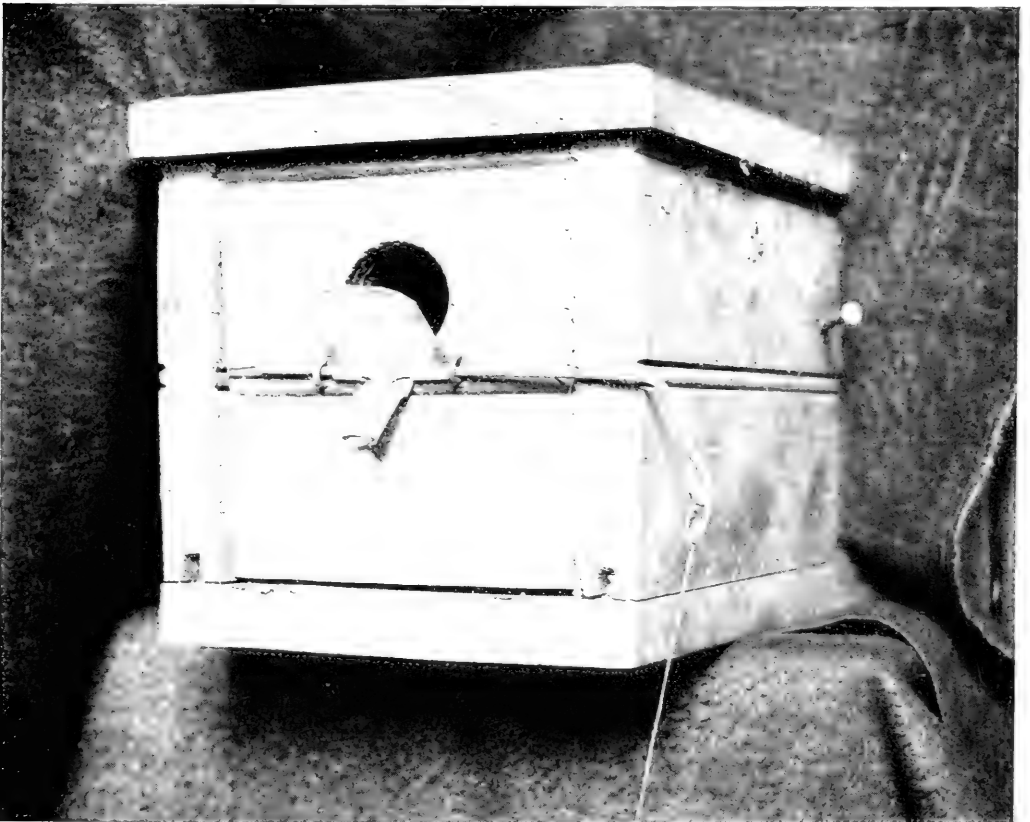


FIG. 2.—PERCH TRAP DOOR (PARTLY CLOSED), IN USE ON A BLUEBIRD BOX.
(See page 26.)



FIG. 3.—BROWN THRASHER, SHOWING METHOD OF HOLDING FOR EXAMINATION.
No. 40222. (See page 27.)



FIG. 4.—BROWN THRASHER, SHOWING METHOD OF HOLDING FOR PLACING A BAND.

door may be attached temporarily to any box, or tree stump, and used for all the hole-nesting birds.

The time to get these birds is when the young are hatched and both parents are coming frequently to the nest to feed them. It is best to get them before the young are many days old, for the young birds soon are old enough to crowd up to the entrance, and the parents feed them without entering, and so cannot be taken.

Placing of band: Always use the smallest size of band that will close around the leg of the bird, fitting it snugly so there is no room for twigs or thorns to slip through and catch in the band. According to my observation, the legs of young birds are larger, more fleshy and soft than those of adults, so no allowance for growth need be made in banding young birds approximately full grown. In fitting snugly, however, the band should be loose enough, and so shaped as to slide easily up and down the leg without binding.

The Cardinal is the only species that, in my experience, is so strong of beak as to bend or pinch his band, in attempting to remove it, and he will, of course. I use on the Cardinal a large-sized band, that will go twice around the leg and resist pressure of the beak.

A bird in the hand: In the handling of many hundreds of birds, one finds certain ways of holding a bird firmly, so that it cannot flutter.

For examination, the bird is best held sitting upright, resting with his claws on the little finger, and with his neck between the first and second fingers. (See figure 3.) In this position the bird will rest placidly, even with the hand left open, so the entire body of the bird may be examined easily. For placing a band, the bird is best held on his back, with the little finger snugly over the throat (see figure 4); and the thumb and first finger are thus in position to hold the leg while the band is adjusted. (See figures 5 and 6.)

Visit the traps often: During the nesting season the traps should be operated only when they may be closely watched—visited at least every hour to prevent the possibility of keeping parent birds from the nest when eggs or young need attention.

At other times, one may visit the traps only four or five times a day, or leave them for some hours, but at some risk of injury to the imprisoned birds.

The entrance wires of these traps may be adjusted to admit larger birds, or set closely enough to the ground to admit only smaller ones. I have caught Catbirds, Brown Thrashers, Blue Jays, and even Doves, but when the entrance is set high for these birds, the smaller birds will learn to run in and out of the trap without being caught. The first hours of early morning, daybreak, are most fruitful, for all birds hunt a breakfast soon after they wake in the morning. The traps should, therefore, be set and baited the night before. An early morning visit is wise, however, as I have sometimes found a whole family of rats in the trap as an over-night product.

The traps should be visited just at dusk, or after all the birds have gone to roost, for a bird is sure to suffer cold, or storm, or injury by mammals, if left over night in the trap.

Injuries: In considering the possible injury to an occasional individual bird by reason of the trapping, it must be asked by what other method may one study, actually in the hand, hundreds, or thousands, of native birds, with so little harm to them. Of some five thousand or more birds that I have held in my hand, during the last four years, not two dozen have been killed. And shrikes have been the cause of most of the fatalities, so that actually not five birds, or one in a thousand, have been killed by the trap or by my carelessness.

One bird was left in the trap over night, a night of storm, and became chilled, and died. Who can tell how all the birds protect themselves so well from storm and come out smooth and dry immediately after? They come out like wet dish rags if caught by a rain in the trap. One warbler was killed when I set the gathering cage down, when his head was pushed out through the mesh at the bottom of the cage. One must watch that carefully.

Many birds in their efforts to escape from the trap scratch the forehead just above the bill, and sometimes scratch it enough to bleed, but this seems to be a necessary incident to

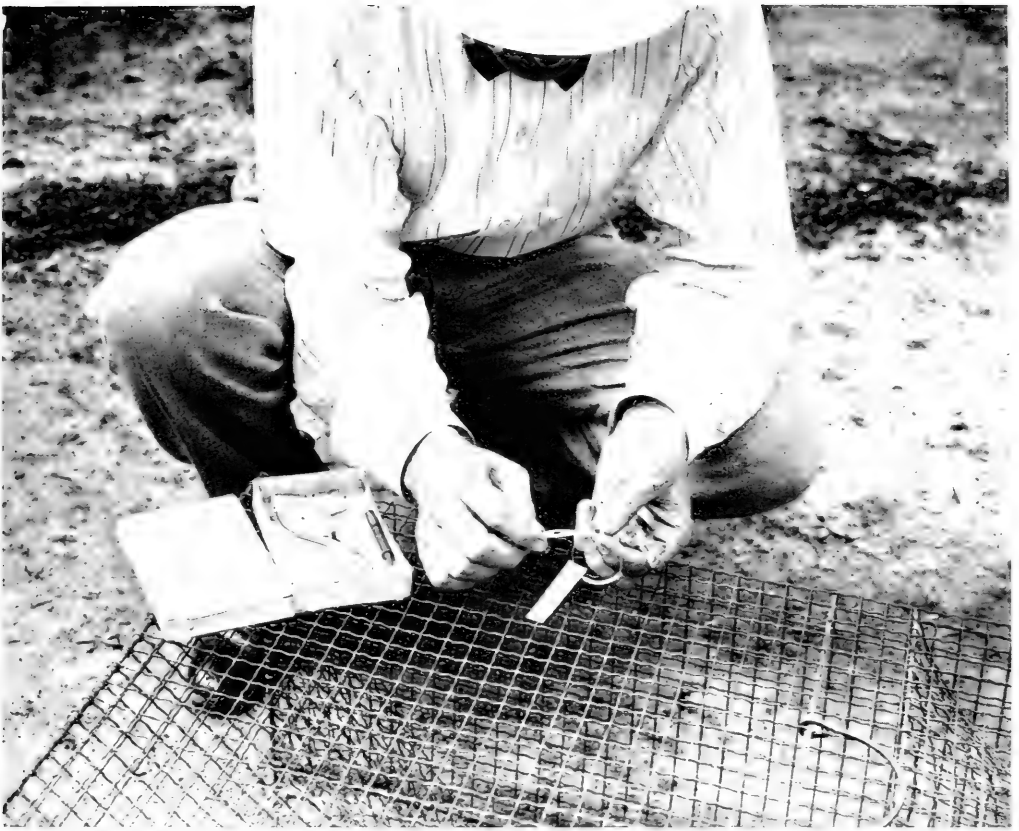


FIG. 5.—HOLDING A BIRD WHILE OPENING A BAND WITH A SMALL, TAPERING INSTRUMENT BEFORE PLACING THE BAND ON THE BIRD'S FOOT. (See page 27.)



FIG. 6.—PINCHING A BAND TOGETHER OVER A BIRD'S FOOT. (See page 27.)

trapping, and not more serious than a scratched finger to a man. These scratched heads are completely healed in three or four days, as I have had proofs many, many times.

The one really serious danger of injury is that a cat, or one of the small hawks, or a shrike learn to get at the trap, and infest the spot until destroyed. I have had little of this trouble in Ohio; but the Loggerhead Shrike is so numerous and destructive in Georgia, that at first sign of torn or injured birds, diligent search must be made for one. These raiders have repeatedly followed their prey into my traps, killed the small birds, and then, being themselves caught, suffered the just penalty for their murders. I do not know what the official judgment is upon the shrike, but to me it appears, in the South at least, very destructive to small birds, and it should be systematically destroyed.

Home record system: In a small box which fits in my pocket, or in the feed pail, I carry the bands, pincers, and pencil, also a "day card" as I call it, a card, of the size used in card systems, upon which I enter every bird taken that day, just the number, name, and trap location, as I keep a record of which trap a bird is taken from. Then each day these entries are posted into a card system, such as that kept by the Banding Association, this being my permanent record. As the entries of the day cards are posted back through the card system, one really establishes a ledger account with each bird, so that his card shows at all times all the different visits he has made to the traps, and the card contains, in fact, a continuous history of the individual. (See day card, figure 11.)

A very handy reference, convenient to use in the field, to find back numbers of re-taken birds, can be made by taking off, upon a few typewritten sheets, the completed season's records. And this condensed tabulation gives a more comprehensive view of the entire season, than one may obtain from examining a card system.

Law: While it is not probable that the game or bird protective organizations in any state would seek to interfere with the scientific study of birds by this method, yet it is possible that the taking of native birds, even for prompt

release, may constitute a technical violation of the State Law. In some states it might happen that a local official, either in spirit of revenge, or in too great avidity for fees, would seek to take advantage of such technical violation.

It is well, therefore, to take up the question with the authorities and to secure perhaps a collector's permit.

Consider also the Federal Migratory Bird Law.

The feeding and protection, that are much a part of this work, so greatly overbalance any occasional injury caused, that this form of study should have every encouragement.

What we may hope to learn by banding: This question is asked many times, and it may be suggestive to others to point out some of the questions for solution.

1. How long do native birds live? Many returns will, in the course of time, give cumulative evidence as to this point.

2. Birds do return to the same spot for nesting year after year. The American Bird-Banding Association has a great number of proofs of this, besides the proofs appearing in this report.

3. Birds do return to the same spot to spend the winter year after year. This report gives ample proof of this fact.

4. Not only are these two propositions true, but the returns contained herein prove that, in migrating, birds stop off at the same feeding places along the route.

5. Where several traps are operated not far from one another, we may obtain some idea of how far birds wander in their feeding, or to what extent do they come to the same feeding table, day after day.

6. My experience is that migrants do not travel each day and about the same distance each day, as some suppose, but, on the contrary, they linger at places along the route, where the feed is good, and while weather is suitable. On route to the South, the next storm will remind them of approaching winter and off they go. I have not been able to determine whether they move ahead of the storm or during the storm, but they are likely to be gone the morning after.

7. If birds do come back to the same place to nest year

after year, will they use the same nest box, and retain the same mate? In my work I keep exact record of the tree or box used by each bird for nesting, and of the trap location where one is taken each time.

8. My experience indicates that when the young birds leave the nest, the family usually does not linger nearby, but moves at once away from the locality. A pair of Wrens moved their family of six young, three hundred yards across my place, during the first day out of the nest, and toward night, had all six lined up in a row on the top wire of a fence.

9. To what extent do birds raise the second brood in the same nest, or same vicinity as the first brood?

10. We may hope that if birds come back to the same spot to nest we may keep a faithful genealogical tree of an individual with its mates and young, from year to year. This seems a joke until you read the history of numbers 27739 and 27740 as given herein.

11. Do young birds return to the same spot another season? I have two cases, a Song Sparrow, Number 44018 banded July 4, 1917, and taken June 23, 1918. And just this week, March 19, 1919, I have taken a Robin, banded as a young bird in the nest May 15, 1917, No. 32932.

This report alone is enough to prove that they do return, not only to the same spot for summer for nesting, but to the same spot to spend the winter. The scientist, rightly agnostic as to it, must have the fact of return proved, and it is amply proved.

But the popular opinion altogether too readily accepts each pair of any species that nests near last year's nest, or in the last year's hole or box, as the identical individuals that were there last year. I have had, frequently, pointed out to me, the same pair of birds that, according to my informant, have nested on the same porch pillar for many years.

While my evidence does not go so far as to call it positive proof, yet my experience is that, in such cases, the chances may be one in five that one of the pair may be the same individual, and, perhaps, the chances are one in twenty-five that both individuals may be the same.

15053, *White-throated Sparrow*: Made itself known by appearing in the trap every day and several times a day until I gave up the count of its appearance. This bird always identified itself, in removal from the trap, by savagely fighting the hands, a fact which was especially noticeable because the other eleven, of the total twelve White-throated Sparrows banded, showed no such fighting spirit at all. This bird is of interest also for being taken again in the same spot in 1916.

16486, *Cardinal (female)*: Was conspicuous for the trap habit, coming to the trap for all her meals and being released several times a day, until I moved the trap 100 yards in order to be free from her.

19246, *Brown Thrasher*: Living under our bed-room window, at once formed the trap habit, and was released, often several times a day, until it learned not to flutter upon my approach, but to stand quietly at the door waiting for it to be opened!

19247, *Brown Thrasher*: Mate of 19246, but, while coming often to the trap, it was always shy of entering and was taken only twice, February 27 and March 13.

Season of 1916, THOMASVILLE

During this active banding season of less than six weeks, from February 19 to March 30, two traps were operated, but four locations were used, the traps being moved from day to day.

These locations were about 100 yards apart, strung across open fields, mostly surrounded by pine woods; they were mostly near buildings and shrubberies and were always kept baited, whether the trap was present or not.

Total birds taken from two traps	654
Of this number, retaken or repeats	441
New birds banded	213
1915 birds taken in 1916, residents,	8 from a possible 27
1915 birds taken in 1916, migrants,	5 from a possible 63
Of 213 new birds, migrants were	169
residents were	44

"Retaken" or "Repeats": I have applied the term "Repeats" to those birds which come into the traps, some of them

again and again, after they first receive a band. The great extent to which they return to the traps will be seen from the above number (441) of repeats out of a total 654 birds removed from the traps. This will be further appreciated when I say that more than half (115 individuals) of the 213 new birds were taken a second time or oftener, in the month, while some individuals form the "habit," and are taken every day or several times a day.

Daily record of traps: A tabulation of daily records shows only a very dull season from February 19 to March 7 of only 4 to 6 total birds per day from the two traps, perhaps half being new birds. Then there was a sudden jump on March 8 to total 14. On March 9, total 29 birds; with varying totals up to 65 birds on March 13, and 75 on the 15th; averaging usually about one-third new. The sudden jump to high daily records came when the Myrtle Warblers and Chipping Sparrows began suddenly to come in great numbers; chiefly Warblers at first about March 8, then chiefly Chipping Sparrows after March 13.

Limits of range: At Thomasville, in 1916, I have faithfully kept a record of the exact location where each bird is taken, each time, this by lettering the stations and attaching the letter each time with the date a bird is taken.

With the four Stations, "A," "B," "C" and "D," 100 yards apart, in a line, making a total length of field some 300 to 400 yards, it is interesting to note in *retaking* Brown Thrashers 28 times, only two were retaken as far away as the next Station. White-throated Sparrows never occurred except at Station A. Towhees retaken ten times were never so far away as the next Station. Blue Jays had wandered to the next Station in two of the cases out of four, Woodpeckers had strayed to the next Station in three cases out of six. In case of the flocks of Myrtle Warblers and Chipping Sparrows, we might expect more wandering, yet only a third of those retaken were so far away as the next Station (on a count of 150 cases).

We must bear in mind that the birds would wander further in search of a scattered natural food, than under these artificial conditions where plenty is always to be found at one spot, or rather at *four* spots or stations; yet, making all allowances, these figures show what to me seems a surprising limit of foraging range; the Thrashers, Towhees and White-throats within a 100-yard radius; Blue Jays and Woodpeckers further but within 200 yards; and, perhaps more interesting, the fact that the Warblers and Chipping Sparrows, migrants in flocks, come day after day to the same feeding station to such an extent. In fact, these migrants do not wander about carelessly over a wide area, but settle down where food is good and stay there.

Returns in 1916 at THOMASVILLE

These classed as Residents:

19246, Brown Thrasher (*Toxostoma rufum*):

1915. Banded February 27, then taken on March 13 and two or three times a day every day until the trap was moved on March 23, always at Station A.

1916. Taken February 21, 22, 25, 27, 28 and March 1, 2, 16, 29.

This bird had the trap habit last year—came for all his meals, became very tame, waiting always patiently at the door to be let out; appeared promptly this year in exactly the same spot, the second day the trap was put out, February 21, and at once fell into the same habit of constantly visiting the trap.

Not taken in 1917 although the mate 19247 was taken then.

19247, Brown Thrasher:

1915. Banded February 27 and taken also March 13; mate of 19246 always at Station A.

1916. Taken on March 4, 11 and 17. Mate of 19246 this year also.

This bird was quite shy of the trap both last year and this year but came regularly to the trap with 19246, remaining usually outside while 19246 would go promptly inside.

1917. Taken March 11 with 31783, probably the mate of this year. 19246, its former mate, was not found in 1917. Taken alone also March 12 and 13.

19252, Brown Thrasher:

1915. Banded March 18 and taken again March 25.
1916. Taken February 28.

17268, Brown Thrasher:

1915. Banded March 12 and taken again March 25.
1917. Taken March 28 and 29.

19248, Blue Jay (*Cyanocitta cristata cristata*):

1915. Banded March 16.
1916. Taken March 9 at B Station, 27th at A Station.
1917. Taken March 10 at A Station.

19254, Blue Jay:

1915. Banded March 20.
1916. Taken February 28.

19670, Cardinal (female) (*Cardinalis cardinalis cardinalis*):

1915. Banded March 24 with 1-a size band.
On March 28 I removed the 1-a size band and placed a No. 2 size.
1916. Taken March 26 and 29 and band found in good condition. This bird always at Station C.

15099, Carolina Wren (*Thryothorus ludovicianus ludovicianus*):

1915. Banded March 18 with its mate 15100.
1916. Killed by a cat March 14 at the same Station (D) where it was banded last year.

These are classed as Migrants, and the White-throated Sparrows and Myrtle Warblers must be supposed to have

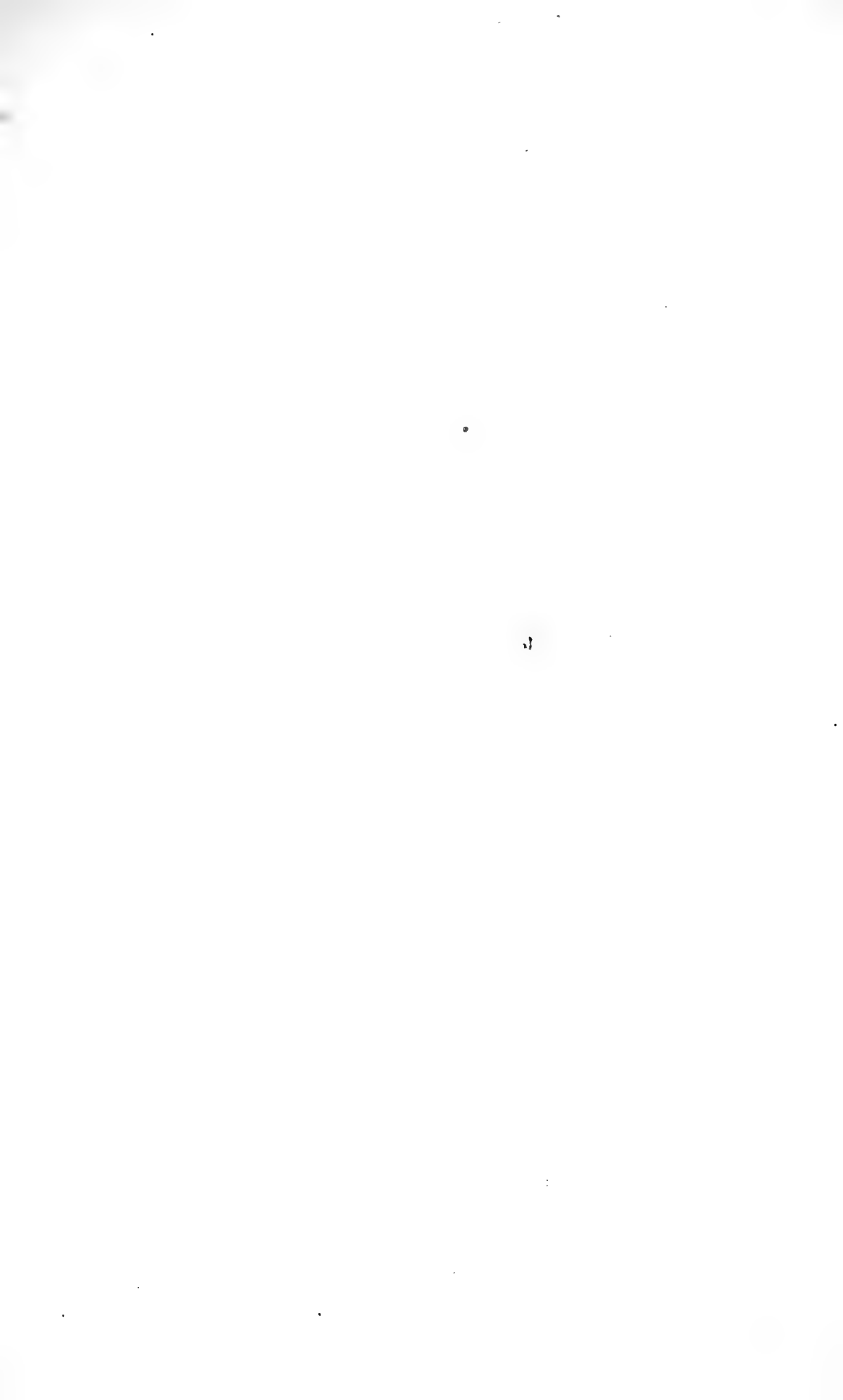


Plate IV.



FIG. 7.—STATION A, THOMASVILLE, GEORGIA. (See page 37.)



FIG. 8.—STATION B, THOMASVILLE, GEORGIA. (See page 37.) DRIVING A DOZEN CHIPPING SPARROWS FROM THE TRAP INTO THE GATHERING CAGE.

spent the summer of 1915 in Canada, or, at least, far north in the United States.

15053, White-throated Sparrow (*Zonotrichia albicollis*):

1915. Banded February 27 and taken many times between that date and March 23, and always identified itself by fighting and biting the hand savagely.

1916. Taken March 1 and 11.

15058, White-throated Sparrow:

1915. Banded March 7.

1916. Taken March 28.

15076, Myrtle Warbler (*Dendroica coronata*):

1915. Banded March 26.

1916. Taken March 8.

17299, Chipping Sparrow (*Spizella passerina passerina*):

1915. Banded March 27.

1916. Taken March 13, Station C.

38325, Chipping Sparrow:

(Former number 15096.)

1915. Banded March 18.

1916. Taken March 13.

The leg was found to be injured by pressure of the band, so the old band was removed and new band adjusted to the other leg.

Notes at Thomasville, 1916

White-throated Sparrows: During both years, 1915 and 1916, in February and March, a flock of perhaps twenty have remained constantly in the shrubbery about Station A (see Fig. 7). I marked twelve in 1915, recovered two of these in 1916, and marked five new ones in 1916. These birds were seldom seen as far away as Station B (100 yards) and never caught so far away (see Fig. 8). More could have been marked and perhaps more from last year recovered, but the trap was, in 1916, run at Station A only occasionally.

Myrtle Warblers: A few were found in flocks about the more open Stations, especially B and C, from February 19, when the traps were first set out, but about March 8 they became more numerous, then by March 20 they were mostly gone. Some individuals, however, remained about the place during the entire five weeks; as 38148 banded February 22 and taken very often to March 23; 38158 taken often from March 4 to 22; 38168 taken often from March 8 to 29; and 38169 taken often from March 8 to 21.

Chipping Sparrows: First appeared on March 8, and abundant within a day or two; they continued to be taken in quantities up to the end of March, when my observations ended. Curiously, the Chipping Sparrows seem to be notable for defects of the toes, one or the other foot being very commonly swollen or club-footed. None of these cases seemed to be sore or showed signs of recent injury or disease. This effect has not, to my recollection, been seen on any of the many hundreds of birds of other kinds handled during the last two years.

Cardinal: The Cardinal is, no doubt, an all-year resident. In fact, I do not consider the Cardinal anywhere migratory, as it is found in northern Ohio abundantly all winter.

In 1915 I banded a dozen or more Cardinals with size 1-a bands, but as I got them back in the traps I found they had pinched in the bands with their powerful beaks, so to pinch and harm the leg. 1-a is correct in size, but as I have recovered the birds bearing that size I have replaced the band with a heavier size and doubled the band upon itself to make it still stronger.

The Cardinal fights the hand savagely, squeals loudly in protest when handled and bites with such strength as to be really painful.

Shrikes: The colored people mostly know the "Butcher-bird," but by many white people, who are not bird observers, they are mistaken for Mockingbirds. The Butcher-bird is very numerous in Georgia and must be destroyed where banding by trap is done, for a pair will establish themselves near the trap and follow into it and destroy any small bird that may be caught.



FIG. 9.—INWOOD PLANTATION, THOMASVILLE, GA. STATION A IS AT THE HOUSE ON THE LEFT. STATION B IS AMONG THE PEAR TREES IN THE CENTER. STATION C IS AT THE COTTAGE ON THE RIGHT. (See page 39.)



FIG. 10.—STATION D, THOMASVILLE, GA. THE TRAP IS AMONG THE SHRUBS

Bait: I have baited uniformly with chick food or finely-ground grain and bread.

The Blue Jay, Brown Thrasher, Towhee, Chipping Sparrow and White-throated Sparrow, Cardinal, Myrtle Warbler and Red-bellied Woodpecker come freely to that bait; Mocking-birds seldom; and I have taken the Hermit Thrush, Palm Warbler, Pine Warbler and Carolina Wren.

Healing of injury: Two cases occur of some interest:

38176, Myrtle Warbler: When taken on March 8 was entirely without evident tail, but within a week the tail was quite half-size or more.

31780 and 31779 Brown Thrasher: Were taken in trap together March 10.

31780 was badly torn about the neck and head, and the skin much broken and torn from the rump, with some evidence that it was the result of attack from 31779 while in the trap. The bird was taken on March 12, 15 and 18, and by that time was thoroughly healed and sound, and when taken afterwards, several times up to March 30, it was quite smooth and healthy in appearance.

Note: Since writing this paragraph in 1916, I have come more and more to believe 31779 not guilty; and that more likely 31780 was injured by the entrance wires of the trap; but I have never found other native birds injured by the entrance wires. Domestic fowls will have their heads caught in the entrance if the guard fence is not kept up.

Season of 1917, THOMASVILLE

During this season of six weeks from February 13 to March 27, five traps were operated, at the same four stations (see figures 9 and 10) as in 1916, the stations being about 100 yards apart, and extending a total length of 400 or 500 yards. The whole area is open fields, each station being located by a cottage surrounded by shrubs.

Total birds taken in five traps.....	684
Retaken or repeats.....	414
New birds	239

Return of 1915 birds—migrants.....	4 from a possible 63	
	or 6.5 per cent.	
residents.....	2 from a possible 27	
	or 7.4 per cent.	
Return of 1916 birds—migrants.....	17 from a possible 169	
	or 10 per cent.	
residents.....	8 from a possible 44	
	or 18 per cent.	
Of new birds banded, migrants were.....	215	
residents.....	24	

The new birds were as follows:

Classed as migrants—	
Myrtle Warbler	64
Yellow Palm Warbler	2
Hermit Thrush	3
White-throated Sparrow	18
Chipping Sparrow	128
Classed as residents—	
Mockingbird	3
Brown Thrasher	2
White-eyed Towhee	1
Blue Jay	7
Cardinal	11

As to Migrants or Residents, we must again state that the division is somewhat arbitrary, being based upon the fact that those birds classed as Residents are at this time mostly in pairs, and some at least nesting.

Among, so-called, Residents we had the following returns:

31766, Mockingbird (*Mimus polyglottos polyglottos*):

1916. Banded February 20 and taken also March 16.

1917. Taken on February 13 in same trap, Station A.

31773, Red-bellied Woodpecker (*Centurus carolinus*):

1916. Banded February 27 and taken also March 6,
10 and 26, Stations B and C.

1917. Taken February 21 and March 13, at B and C.

31778, Red-bellied Woodpecker:

1916. Banded March 7 and taken also March 11, 19,
21, 22 and 24, at Stations A, B and C.

1917. Taken March 9 and 11, at B and C.

Plate VI.

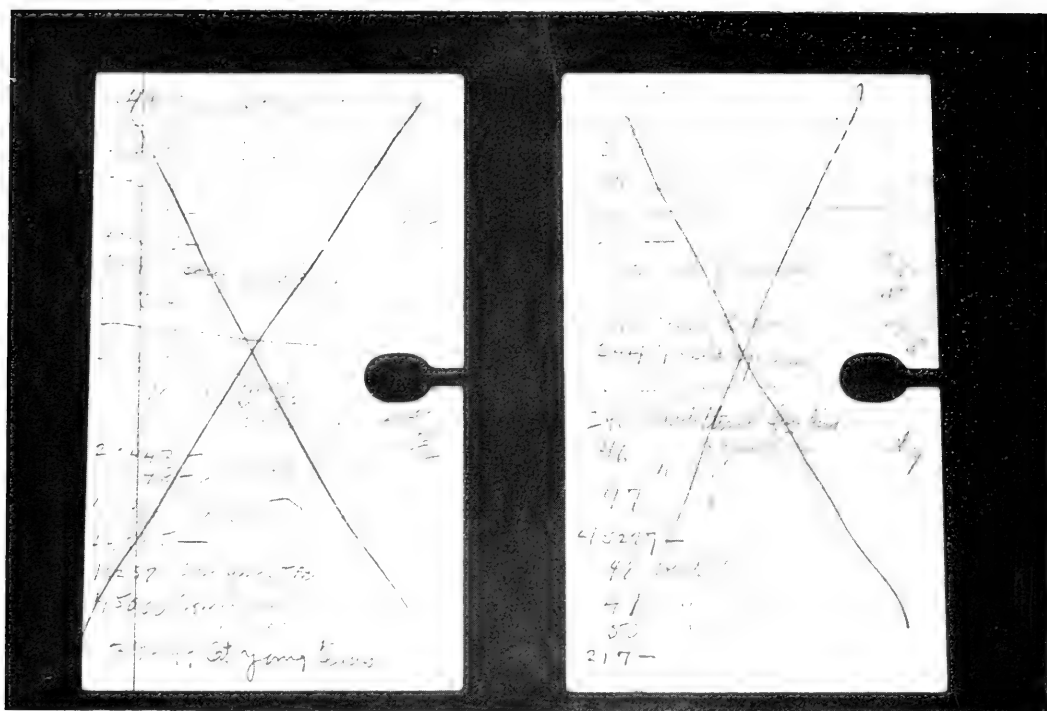


FIG. 11.—TYPE OF FIELD CARD CARRIED IN THE BANDING BOX. (See page 29.)



FIG. 12.—NUMBER 31770, TOWHEE, MALE. (See page 41.)

31783, Brown Thrasher:

1916. Banded March 11, Station A.

1917. Taken February 25, and March 11 and 21. On March 21 this bird was with 19247, possibly mate, which see, next. Always at Station A.

19247, Brown Thrasher:

Taken in 1915, 1916 and 1917.

See full statement in 1916 list.

40222, Brown Thrasher: (See figures 3 and 4.)

1916. Banded March 31, and taken also March 22, 26, 27, 29.

1917. Taken March 3, 6, 8, 15, always at Station C.

31779, Brown Thrasher:

1916. Banded March 10, with 31780, supposed to be its mate.

1917. Taken March 6, leg seemed hurt by the band and the band was removed to the other leg. Taken also March 7 and on March 8 with 40796 and alone on March 15, always at Station D.

19248, Blue Jay:

1915. Banded March 16.

1916. Taken March 9 and 27 at Stations A and B.

1917. Taken March 10, at Station A.

31775, Blue Jay:

1916. Banded March 1 and 4, Station C.

1917. Taken March 20, at Station D.

A very handsome bird.

31770, White-eyed Towhee, male (*Pipilo erythrophthalmus alleni*): (See figures 12 and 14.)

1916. Banded February 22, and taken also Feb. 25, 28, March 1, 5, 16, 17. Taken with 31771 female on Feb. 25, and with 29843 female March 1.

1917. Taken alone March 9, 11, 13, 15, 16, 19. Taken with 16251 female several times, as follows: Feb. 22, March 12, 14, 15, 17, and on March

8 taken with a female not marked. Taken always in Trap A except on March 13 in D—400 yards distant. It is very unusual to take a bird so far away.

From Migrants we had the following returns:

38168, Myrtle Warbler:

- 1916. Banded March 8 in B station, and taken March 11 in B, 12th in D and C, 15th in C twice, 17th in C twice, 18th in B, 20th in C, 21st in C, 23d and 25th in C, 28th in C, 29th in C.
- 1917. This bird resumed immediately the trap habit appearing the first day of trapping February 13 in B. Then February 16 in C twice, 20th in C, March 5 in C, 7th in D and C, 9th in D, 13th in D, 14th in D.

38162, Myrtle Warbler:

- 1916. Banded March 7, B station, taken March 9 in B and D, 10th in B, 12th in D, 13th in C, 14th in B, 15th in B and C.
- 1917. Another known for its trap habit in 1916 appeared the first day of trapping February 13 in C, then 14th in C, 15th in C twice, 16th in C twice, 20th in C, 23d in C, 28th in C twice, and March 2 in C, 3d in C and D, 7th in C, 8th in D.

38346, Myrtle Warbler:

- 1916. Banded March 14, and taken also March 17, at C and B stations.
- 1917. Taken Feb. 15 and 16 at C Station.

38175, Myrtle Warbler:

- 1916. Banded March 8.
- 1917. Taken Feb. 16.

38196, Yellow Palm Warbler (*Dendroica palmarum hypochrysea*):

- 1916. Banded March 9, B Station, and taken again March 12, C Station.

1917. Taken Feb. 14, B Station.

These Warblers may remain through the winter, as they are present in numbers when I first arrive at Thomasville, in early February, but they increase in numbers about the middle of February; after March first very few Warblers are taken, and by March 15 all are gone except a few stragglers.

16481, White-throated Sparrow:

1915. Banded February 25, taken also Feb. 27 and March 1.

1917. Taken Feb. 22, 27, March 19, 20.

38443, White-throated Sparrow: (See figure 13.)

1916. Banded March 29, taken also March 30.

1917. Taken Feb. 25, March 2, 4, 13, 15. Photographed on March 15.

38435, White-throated Sparrow:

1916. Banded March 27.

1917. Taken March 2 and 4.

38160, White-throated Sparrow:

1916. Banded March 5, taken also March 6, 7 and 16.

1917. Taken March 7 and 19.

38438, White-throated Sparrow:

1916. Banded March 27 and March 29.

1917. Taken March 7.

The White-throated Sparrows are always about Station A, the same spot as in 1915 and 1916, and it seems reasonable to call it the same group, coming each year with some accretions of the year (as I banded 18 new birds out of the group). This identification of the group as the same group is based upon the fact that in 1916 I obtained two 1915 birds, and this year I have had, as shown above, one 1915 bird and four 1916 birds.

These birds probably remain all winter, as they are settled at Station A when we go south, in early February, and they do not change location or move away before April.

38313, Chipping Sparrow:

- 1916. Banded March 13. Taken also March 14 and 16.
- 1917. Taken March 3 and 20.

38439, Chipping Sparrow:

- 1916. Banded March 28. Taken also March 30.
- 1917. Taken March 8 in D, 16 in C, 18 in C, 19 in B, 20 in D, 21 in C, 26 in B and C.

15098, Chipping Sparrow:

- 1915. Banded March 18.
- 1917. Taken March 12.

38428, Chipping Sparrow:

- 1916. Banded March 21. Taken also March 29.
- 1917. Taken March 12.

38442, Chipping Sparrow:

- 1916. Banded March 29.
- 1917. Taken March 14.

38318, Chipping Sparrow:

- 1916. Banded March 13.
- 1917. Taken March 14.

38434, Chipping Sparrow:

- 1916. Banded March 26.
- 1917. Taken March 14.

38337, Chipping Sparrow:

- 1916. Banded March 14.
- 1917. Taken March 15.

17271, Chipping Sparrow:

- 1915. Banded March 19. Taken also March 26 and 28.
- 1917. Taken March 16.

17278, Chipping Sparrow:

- 1916. Banded March 19.
- 1917. Taken March 17 and 19.

38409, Chipping Sparrow:

- 1916. Banded March 16. Taken also March 21, 24, 25, 28. One swollen foot.

1917. Taken March 19.

The Chipping Sparrows were not seen when we first came south in February; none was taken until March 3, when they appeared in great numbers. As they had evidently spent the winter further south and were only stopping off at Thomasville, en route, on the migration northward, it seems remarkable that we should take, as shown above, three birds of 1915 banding, and as many as eight of 1916.

Among Chipping Sparrows we found again this year many birds having swollen toes, at least 10, or probably 12 or 13 birds out of 128, or about 10 per cent. of them.

Shrikes: We again had trouble with Loggerhead Shrikes, as they quickly learn to perch near a trap and kill any bird that is caught.

These birds are very abundant in Georgia and must destroy an enormous number of small birds. We are convinced that they do more harm than good and would favor a concerted attempt to destroy them.

SAMPLE DAYS AT THOMASVILLE

The following are daily records taken from the field notes; every bird taken during the day is entered, the new birds receiving a band, and the birds that have already received bands this season marked "repeats" (see Fig. 11).

From these day-lists we compile for our convenience a sort of ledger-list upon which each successive occurrence of a bird is carried back to the original entry of that bird, thus giving concisely the history of each individual for the season, or for successive seasons. When banding on such a scale, we find these lists very convenient for quickly hunting up birds that are re-taken.

1917:

February 13. Sunny 50° Temp. Set traps A, B and C.

7824	Myrtle Warbler,	new	} Trap B
7825	" "	new	
38168	" " of 1916		
7826	" "	new	} Trap C
7827	" "	new	
38162	" " of 1916		
31766	Mockingbird,	of 1916	Trap A
16246	Hermit Thrush,	new	A
7826	Repeat		} Trap C
7827	"		
7829	Myrtle Warbler,	new	
7830	" "	new	
7831	" "	new	

First Day of this Season—at Thomasville

March 3. Sun 75°. Traps A, AA, B, C and D.

38313	Chipping Sparrow, of 1916	} Trap D
27442	" " new	
40222	Brown Thrasher, of 1916	} Trap C
38162	Myrtle of 1916, repeat	
27440	Myrtle Warbler, repeat	
15347	" " repeat	AA
15669	White-throated Sparrow, repeat	A
27486	Chipping Sparrow, new	C
27440	Repeat D	} Note both these this morning at C.
38162	Repeat D	
27487	Chipping Sparrow, new	} D
27488	" " new	
27489	" " new	

Today is First Appearance of Chipping Sparrows

March 12. Sun 70°. Traps A, AA, B, C and D.

41897	Blue Jay	new	}	B
15325	Myrtle Warbler, repeat			
15340	"	"	}	C
7844	"	"		
10253	"	"		
38296	Chipping Sparrow,	new	}	D
27441	Myrtle Warbler, repeat			
10598	Chipping Sparrow, of 1915		}	D
38278	"	repeat		
38428	"	of 1916	}	C
38293	"	new		
38294	"	new		
38295	"	new		
38291	"	repeat	}	B
38653	"	new		
38654	"	new		
41898	Cardinal female	new		B
27499	Myrtle Warbler, repeat		}	C
16247	Hermit Thrush, repeat			
32193	Cardinal female,	new		
27442	Chipping Sparrow, repeat			
27500	"	repeat, swollen right toe		D
16251	Towhee female, repeat			
31770	" male of 1916, repeat			A, taken together several times.
15669	White-throated Sparrow, repeat			A
19247	Brown Thrasher of 1916, repeat			AA

March 15. Sun 75°. Traps A, AA, B, C, D.

On this day the traps were not visited until 11 o'clock A.M., when the following birds were removed and photographs taken of some of them.

- 38665 White-throated Sparrow, new A
- 31770 Towhee male of 1916, a repeat, in AA (See Fig. 12)
- 31779 Brown Thrasher of 1916, repeat D

38271	White-throated Sparrow,	repeat D-note station D,	
	not A.		
27496	Chipping Sparrow,	repeat	D
38337	" "	of 1916	D
40222	Brown Thrasher of	1916	repeat C
38664	Chipping Sparrow,	repeat	} C
38666	" "	new	
38667	" "	new	} B
38668	" "	"	
38669	" "	"	
38670	" "	"	
38671	" "	"	} B
37500	" "	repeat	
38289	" "	"	
38658	" "	"	
31770	Towhee male	} repeats in A, (Fig. 14) 31770 having been removed from AA only half an hour before.	
16251	" female		
38443	White-throated Sparrow of	1916,	repeat A, (Fig. 13)
15345	" "	"	repeat A
38672	" "	"	new A

BANDING NEAR CLEVELAND, OHIO

Season of 1914

During this season I became interested in banding, and from June 15 to November 1 banded 117 birds, mostly young birds in the nest, including six Yellow Warblers, 12 House Wrens, 6 Chipping Sparrows, 15 Catbirds, 14 Robins and a few Flickers, Song Sparrows and others. Not until October, when I began to trap the House Sparrows, did I begin to find out the value of trapping in the banding work.

Season of 1915

Banded from the nest	135
Banded from traps	192
Total	<u>327</u>



FIG. 13.—NUMBER 38443, WHITE-THROATED SPARROW. (See page 43.)



FIG. 14.—A PAIR OF TOWHEES. (See page 48.)
Nos. 31770 and 16251

After my experience in Thomasville, Georgia, in March, 1915, I realized the importance of the traps, not only for banding adults but because of the immensely greater probability of getting returns. During the early part of the season the traps were out only occasionally, for a few hours, and this may partly explain why so few returns of birds banded in 1914 were obtained.

There were only two returns from last year:

15819, Catbird (*Dumetella carolinensis*), adult:

1914. Banded July 5, and taken July 6 and August 12 with young 17388.

1915. Taken May 23.

15839, Song Sparrow (*Melospiza melodia melodia*):

1914. Banded October 6.

1915. Taken May 31.

The Catbird had, no doubt, been south for the winter and returned; but the Song Sparrow may have remained here over the winter.

The Divorced Wrens: It was during this season that I discovered that, in case of birds nesting in boxes, or holes in trees, as the Wrens, or Bluebirds, or Woodpeckers, it is quite easy to catch the adults, for banding, as they enter the nest to feed the young.

A pair of House Wrens, Nos. 27739 and 27740, in a box on the greenhouse, were banded in this way on June 19, 1915. Their brood, banded at the same time, received bands 27723 to 27728 inclusive. After an absence from the farm for six weeks I returned to find, in the same box on the greenhouse, another young brood just ready to fly. I gave them bands 27783 to 27787 inclusive, and caught the parents, to discover to my surprise that one parent was 27740, but the other was a new mate, without band, and received band 27782. As birds so quickly find a new mate, when a mate is lost by death, I did not realize just what had happened until I found that 27739 had at the same time (August 14), a nest in a box only 100 feet away, with a new mate, and a brood ready to fly, 27772 to 27777 inclusive. I was unable to get this second

mate of 27739 because the young left the nest that day, August 14.

No. 27739 has further distinguished itself by coming back, in June, 1916, to the same box occupied by it for its second brood in 1915, and I have marked the mate, but of course cannot tell whether it is the same as its second mate of 1915. This 1916 mate of 27739 is No. 38491 and with this mate there were raised the young brood Nos. 38492 to 38496 inclusive.

Total Wrens banded in 1915—44.

All left the farm September 5 with the storm.

Song Sparrows: Total banded—88. Of the 20 banded in May and June, only one was taken after July, No. 27755, taken on October 1. During six weeks in July and early August, observations were omitted because of absence from the farm. During the last two weeks of August, 34 were banded, many young birds in family groups; and some of these were frequently re-taken until September 5. On September 4 and 5, there was a drop in temperature accompanied by storms, and the families of Song Sparrows departed; only 4 birds were taken after September 5, No. 27781, a young bird, on September 22; No. 27800, on September 23 and 30; No. 27806, on September 27; and No. 27822, on October 17. A week after September 6, hardly a Song Sparrow was seen, then new birds began to come in; 26 banded in September and October.

All this means that after the first broods left the nests in June, both old and young left that vicinity; then other parents raised other broods in August and these mostly departed at the first September storm.

White-throated Sparrows: Total banded—43.

First appeared from the north on September 25, abundant by September 30. The birds arriving and registered in September and the first week of October did not move on each day, but many of them remained there as long as weather and feed were good, to go, on October 15, when the next storm developed; with that storm came new individuals, who, in turn, remained through good weather and moved along at the time of the next storm, about October 26, when all disappeared.

White-crowned Sparrows: These did not appear until October 1, and the early individuals, like the White-throated Sparrows, remained about the farm until the storm of October 14, some late arrivals remaining until the next storm on October 26, and a few stragglers until October 30.

Of the 28 individuals banded in October, only 7 were in mature plumage.

Season of 1916—May 1 to November 1, CLEVELAND

Total birds banded	280
Of these, young in nest	100
Banded from traps	180
Banded in previous years	444
1914	117
1915	347
Birds of previous years taken 1916	5

From these figures, it appears that 280 new birds were banded during the summer; that during the two previous seasons a total of 444 birds had received bands; and during the summer of 1916 only five birds were taken of the possible 444 which had received bands in previous years.

This seems to bear out the conclusion I came to after the season of 1915, that birds do not return to exactly the same spot from year to year nearly so much as they are popularly believed to return.

This conclusion is not wholly fair, however, as to the summer of 1916, because, for business and other reasons, I was unable to make the same systematic study as during the summer of 1915.

At no time during the summer could I operate the traps except occasional days, or parts of days, perhaps two or three times a week; then I was absent the entire months of July and August.

The five birds taken from 1915 birds were as follows:

27705, Song Sparrow:

- 1915. Banded May 26 and taken June 5.
- 1916. Taken June 20 on same spot.
- 1918. July 7, killed in trap by a Shrike.

27844, Song Sparrow:

1915. Banded September 25.

1916. Taken September 19, on same spot.

27845, Song Sparrow:

1915. Banded September 26.

1916. Taken dead August 28.

31741, Red-headed Woodpecker (*Melanerpes erythrocephalus*), male:

1915. Banded June 19. Mate of 31739.

1916. May 22, shot in same orchard because he insisted upon appropriating a nest already occupied by a Bluebird family.

27739, House Wren (*Troglodytes aëdon aëdon*):

Most interesting, one of the so-called "divorced Wrens" of 1915. See this bird and 27740 of last year. Appeared this year, and with a mate, 38491, had a brood, 38492 to 38496 inclusive *in the same box* which this bird occupied with its second mate of last year. As I was unable to catch and band the second mate of last year, I am unable to say whether this year's mate is the one taken as second mate last year.

This can be put down as a season of negative results, because of lack of time. During 1915 I had banded every House Wren, old or young, on the farm but could not watch them closely this season, so had only one return.

White-crowned and White-throated Sparrows: In 1915 these came in distinct waves; with each storm the marked lot would depart, and a new lot come down from the north. In 1916, during the whole of September and October, a uniform condition of weather prevailed, at least the storm periods were not severe, and the effect was noticed in the scattering arrival and departure of these Sparrows.

White-crowned Sparrow: banded 15, of this number 12 in immature plumage, all migrating.

Song Sparrow: banded 68, very few being retaken, but again this was due to the traps being out so little during the season.

Junco: banded 8 birds, and not before October 13, after the White-crowned and White-throated Sparrows had mostly gone.

Other birds taken in the traps are Field Sparrows (*Spizella pusilla pusilla*) and Chipping Sparrows, with an occasional Catbird or Brown Thrasher.

I wish to call attention again to the very great increase in the number of native birds of all kinds about my farm during the last three years since I have operated sparrow traps more or less steadily all year, and thus kept the farm free of House Sparrows.

Season of 1917, CLEVELAND

New birds banded—167

Returns from previous years:

38645, Song Sparrow:

1916. Banded Sept. 14.

1917. Taken May 11.

38480, Song Sparrow:

1916. Banded June 18, and taken June 20.

1917. Taken May 15 and July 15.

38461, Chimney Swift (*Chætura pelagica*):

1916. Banded June 6.

1917. Taken June 12. In both cases it came down same bedroom chimney.

29867, Catbird:

1916. Banded June 25.

1917. Taken June 21 and 23 and on June 24 with 16254. Killed in trap by hawk June 24, 1917.

29863, Catbird:

1916. Banded June 22.

1917. Taken June 21.

1919. Taken June 21, tail missing.

1924, Brown Thrasher:

1916. Banded June 27; described as a brilliant bird.

1917. Taken July 3, with young, 20584, 40790, 21525, 21526.

1918. Taken June 22, with young, 53026, 53027, 53028,
and June 24 and 27.

31733, Northern Flicker (*Colaptes auratus luteus*):

1915. Banded June 3.

1917. Found dead May 15.

White-crowned and White-throated Sparrows: For some reason the White-crowned Sparrows have, this autumn, far out-numbered the White-throated, quite contrary to my usual experience here:

This October the migration of these two species has been in waves, again, as in 1915, arriving and departing with the storms.

They came in about October first, then numbers of them left about the 11th when the temperature dropped, and a trace of snow fell; many new ones came down from the north at the same time.

Then on October 20 there was another fall of temperature and snow-fall, and more of these birds went South. They all left at the time of the blizzard of November first. Because it is difficult to operate the traps during a storm, and because the birds do not feed at such times, it is not easy to say whether birds leave ahead of a storm, during the storm or after it; but certainly many of them do feed at the traps right up to the time of the beginning of the storm period.

Season of 1918, CLEVELAND

Banded young in nest.....	30
Adults.....	123
1918 total.....	153
Totals of previous years: 1914.....	117
1915.....	347
1916.....	280
1917.....	167
Total previous to 1918.....	911

Returns from previous years:

44008, House Wren:

1917. Banded July 4 with mate 44009 and brood
44010 to 44014 inclusive.

1918. Taken June 19 in the same nest box No. 51 in the corner of the flower garden. New mate of this year 44100. Brood with this mate 44508 to 44514 inclusive.

1924, Brown Thrasher:

See 1917 list for the history of this bird for three years, and its young of two seasons.

44018, Song Sparrow:

1917. Banded July 4 and then marked *young*.
1918. Taken June 23.

Since the question is asked whether young birds will return to the same spot another year, it may be best to say that this was not banded in the nest, but was banded with three others taken from the trap at the same time and all judged by appearance to be young of the same brood. There is of course the possible error of judgment of the age under the circumstances.

40241, Robin (*Planesticus migratorius migratorius*):

1916. Banded May 28, young in the nest.
1917. March 3, taken at Langley, South Carolina, on the farm of Mr. S. C. Holman; "found wounded" by Mr. Holman's young son.

21531, Sparrow Hawk (*Falco sparverius sparverius*):

1916. Banded June 18, young in the nest.
1917. July 12, shot by Roy Haylor, near Engine Co. No. 11, East 91st Street and Walker Ave., Cleveland.

Additional data: In letter dated Aug. 9, 1917, Mr. Haylor says, in answer to questions: "For the last few years this same hawk, as we think, has sat on the tip of a church steeple for hours each day, and this church is in a small park which is a nesting place for lots of robins and other birds. This hawk would rob the nests and eat all the young, so we decided to shoot him, as the birds were in commotion whenever he was around.

"He used to roost at night in the top of the steeple till a pair of yellow hammers made their nest up there two years ago. Then he went somewhere else at night. We have never noticed a mate, but the next day a hawk of the same kind soared around, and has ever since, as though it was looking for him, but he never alights on the steeple."

27705, Song Sparrow:

This bird taken in 1915, 1916 and 1918.

For dates see 1916 list.

32932, Robin:

1917. Banded May 15, young in the nest.

1919. Taken March 19.

This, properly belonging to the experiences of this current year (1919), is included, as it appeared in the greenhouse, the first bird taken this season. And here is an absolutely certain case of a young bird returning to the spot where it was hatched. No doubt it was on the place in 1918 but I have, as yet, no practical way of getting Robins by trap.

Notes in 1918.

Baltimore Oriole: One family of Orioles (*Icterus galbula*) learned to come to the trap the day the young left the nest, and came several times a day for a few days, then disappeared. Orioles had never come to the bait before.

White-throated and White-crowned Sparrows: For some unknown reason, last October the White-crowned Sparrows greatly predominated, while this year the White-crowned were hardly to be seen. Banded 44 White-throated and only 3 White-crowned. White-throat, No. 45245, was marked as a bird of extra fine plumage and an extra fine squealer when handled. The migration of these birds has been this year like that of 1916. Uniform mild weather without severe storms has given little cause for the birds to come and go in waves as in 1915 and 1917.

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ADDENDA

Page 29.—*Law*: To collect migratory birds, a permit is necessary under the United States laws, and a form for application for such may be secured by addressing a request to the Bureau of Biological Survey, Department of Agriculture, Washington, D. C. Inquiries as to the laws of any State should be addressed to the State Game Warden.

Page 53.—29863, Catbird:

1919. Taken June 21 in the greenhouse; tail feathers missing.

(This bird then has been taken in 1916, 1917, and 1919.)

Page 55.—44008, House Wren (top of page):

1919. On June 17 taken in Box on the greenhouse about seventy-five yards from Box 51 occupied in 1917 and 1918. The mate this year, however, is 44100, the same mate as last year, this being an interesting instance of faithfulness in marked contrast to my "divorced Wrens" described elsewhere in this report.

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1919-1920

No. 32

A B S T R A C T
OF THE PROCEEDINGS OF THE
LINNAEAN SOCIETY
OF
NEW YORK

For the Year Ending

March 9, 1920

CONTAINING
A Revision of the Seaside Sparrows

BY LUDLOW GRISCOM AND J. T. NICHOLS

Date of Issue, December 6, 1920

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ABSTRACT
OF THE
PROCEEDINGS
OF THE
LINNAEAN SOCIETY OF NEW YORK

This is the thirty-second in the series of *Abstracts* published by the Linnaean Society of New York, and, like the preceding issues, is prepared mainly as a brief review of the work of the Society during the year closing with the date indicated above. Papers presented before the Society and published elsewhere (often enlarged or otherwise different in form) are mentioned with proper reference to the place of publication.

March 25, 1919

The President in the chair. Seven members (Dr. Dwight, Dr. Janvrin, and Messrs. Breder, Gladden, Marks, L. N. Nichols, and Rogers) and seven visitors present.

Mr. G. K. Noble, whose name had been proposed at the previous meeting, was elected to Resident Membership.

Mr. L. N. Nichols reported a Mockingbird (*Mimus p. polyglottos*) which had been seen on the east side of Bronx Park by him March 3, and by Mr. Hix and others several times since. A local gardener had told him he had seen one about all winter, as he had almost every winter, though he thought not in the exceptionally severe season of 1917-1918. Mr. Nichols and others had noted a well-marked return-flight of Pine Siskins (*Spinus p. pinus*) this spring.

Dr. Janvrin said he had seen flocks aggregating 150 Canada Geese (*Branta c. canadensis*) at Long Beach, L. I., on the day of the meeting, but ducks were scarce, as they had been all winter.

Several members had noted an unusually early movement of Hermit Thrushes (*Hylocichla guttata pallasi*); Mr. Gladden had seen a flock of six on March 15.

The speaker of the evening was Mr. George P. Englehardt, of the Brooklyn Museum, whose title was "The Deserts and Plateaus of Utah," which he had explored as a collector of reptiles and batrachians. Mr. Englehardt told about the many species of these he had found in the different geologic regions of the State, and also, to a less extent, of the birds and other animals. It was a surprise to most of his hearers that such Mexican-border desert

forms as Gila Monsters (*Heloderma suspectum*) and Road-Runners (*Geococcyx californianus*) were to be found so far north, and especially that a species of Horned Lizard (*Phrynosoma*) occurred up to 8000 feet in the mountains.

April 8, 1919

The President in the chair. Nine members (Dr. Dwight, Dr. Janvrin, and Messrs. Breder, Granger, Marks, J. T. Nichols, L. N. Nichols, Rogers, and Valentine) and two visitors (Mr. J. H. Fleming and Mr. Morris Pell) present.

The President appointed the following committees to serve for the ensuing year:

Membership

Messrs. J. T. Nichols, J. M. Johnson, Weber.

Finance

Messrs. Woodruff, Granger, Weber.

Papers and Lectures

Messrs. Rogers, Murphy.

Publications

Messrs. Rogers, J. T. Nichols.

Bird-Banding

Messrs. J. T. Nichols, Rogers.

Mr. Granger reported for the Auditing Committee that the Treasurer's Report, submitted at the Annual Meeting, had been examined and found correct.

Mr. Pell mentioned seeing some 300 Canada Geese (*Branta c. canadensis*) on Shinnecock Bay, April 6, though other species of the family were rather few.

Mr. L. N. Nichols recorded the continued presence of the Mockingbird (*Mimus p. polyglottos*) in the Bronx.

Dr. Dwight gave the evening's paper, "The Wing-Patterns of North American Gulls." With the aid of a full series of the *Larinae* of this continent, the speaker gave a clear idea of the patterns of the five outer primaries of the various species. This character is of obvious importance in the classification of the group, at least as to species and subspecies, as each form has its diagnostic pattern, though in some there is considerable range of individual variation.

April 22, 1919

The President in the chair. Twelve members (Dr. Dwight, Dr. Janvrin, and Messrs. Bowdish, Gladden, Granger, Griscom, Hix, Lang, Marks, J. T. Nichols, L. N. Nichols, and Valentine) and nine visitors present.

In the absence of the Secretary, the Chair appointed Mr. J. T. Nichols Secretary *pro tem*.

As regards the arrival of birds from the south, Mr. Bowdish stated that in his opinion the spring migration was ahead of

schedule. The following early arrivals at Demarest, N. J., noted in spite of the fact that he had not had an opportunity for consistent observation, are evidence to that effect: Belted Kingfisher (*Ceryle alcyon*), March 16; Ruby-crowned Kinglet (*Regulus c. calendula*), April 8; House Wren (*Troglodytes a. aedon*) April 20. He had also found a Phoebe (*Sayornis phoebe*) sitting on five eggs, April 20, at Demarest; three young Woodcock (*Philohela minor*), apparently hatched that morning, in Salem Co., N. J., April 6; and a Whip-poor-will (*Antrostomus v. vociferus*) at Rumson, N. J., April 13. On the other hand, this year a Long-eared Owl (*Asio wilsonianus*) remained a little longer into the spring than previously at their winter station on his grounds at Demarest—namely, until April 4.

Mr. Gladden recorded a Yellow-throated Warbler (*Dendroica dominica* subsp.) seen in Central Park on April 17 by Scout Albert Pincus, verified by Mr. W. DeWitt Miller. From discussion, it appeared that this bird had also been seen by other observers on April 15 and 17.

Mr. Hix mentioned the arrival of the Parula Warbler (*Compsothlypis americana usneae*) in Central Park April 21, and Cowbirds (*Molothrus a. ater*) and a Mourning Dove (*Zenaidura macroura carolinensis*)—both species rare in the Park—observed there March 20.

Mr. J. T. Nichols reported for Mr. H. S. Boyle an Indigo Bunting (*Passerina cyanea*) observed by Mr. Boyle near Flushing, L. I., April 19.

Mr. L. N. Nichols had seen: a Brown Thrasher (*Toxostoma rufum*) in Bronx Park April 8, Barn and Rough-winged Swallows (*Hirundo erythrogaster* and *Stelgidopteryx serripennis*) in Van Cortlandt Park April 13, Green Heron (*Butorides v. virescens*) in Bronx Park April 21, and Green Heron and Black and White Warbler (*Mniotilta varia*) in the Phelps Estate, near Englewood, N. J., April 22.

The paper of the evening was by Mr. Ludlow Griscom, who told of field observations on birds in France, made this last summer, when he was a member of the A. E. F.* After comparing French with American birds in general, he described more in detail the birds as noted on and near the battle-grounds and their behavior under fire, and concluded with a description of a trip made, during leave, to the delta of the Rhone, in southeastern France, where at that season water-fowl and other birds concentrate, much as they do on our Gulf Coast.

May 13, 1919

The President in the chair. Eleven members (Dr. Dwight, Dr. Fisher, and Messrs. Breder, Gladden, Granger, F. E. Johnson, Lang, Marks, E. G. and L. N. Nichols, and Rogers) and thirty-seven visitors present.

Mr. L. N. Nichols reported that while the warblers had for the most part come very early, they were now in about their usual respective numbers for the time of year.

Scout Pincus and others present had seen a Prothonotary Warbler (*Protonotaria citrea*) in Central Park May 2. It had

* See "War Impressions of French Bird Life," in *Natural History*, XIX, 411-415.

been seen also by Mr. W. DeWitt Miller, of the American Museum.

Dr. William K. Gregory gave the evening's lecture, "Some Facts and Theories of Evolution, with Special Reference to the Origin of Man."* He explained what is known of how evolution had taken place as shown by the geologic record. It had been a gradual change in form, frequently correlated with a similar and sometimes radical change in function. Intensification of function had led to over-specialization, and the latter had finally caused the extinction of the species. The origin of man from the lower primates was discussed, with the evolution of the hand, foot, skull and teeth in fossil and living primates used in illustration.

May 27, 1919

The President in the chair. Sixteen members (Dr. Dwight, Dr. Janvrin, and Messrs. Breder, Granger, Griscom, Hix, F. E. Johnson, Lewis, Marks, E. G. Nichols, J. T. Nichols, L. N. Nichols, Noble, Rogers, Valentine, and Weber) and sixteen visitors present.

Mr. Rogers reported that on their annual "Big Day", May 18 he and Mr. W. DeWitt Miller had spent 18 hours afoot in the country between Plainfield, N. J. and the Passaic River, and had noted 101 species of birds.

Mr. J. T. Nichols recorded a party of six Northern Phalaropes (*Lobipes lobatus*) seen by him and Dr. Janvrin in a pool on the bay-side marshes at Mastic, L. I., May 17.

Mr. Hix started a discussion of the predatory habits of *Quiscalus* by telling of a Purple Grackle (*Quiscalus q. quiscula*) he had seen persistently persecuting a Spotted Sandpiper (*Actitis macularia*) in Central Park. Mr. Griscom said he had seen a Grackle carrying a House Sparrow (*Passer domesticus*) in its feet, and Mr. Granger described how, one season, the Grackles from Central Park regularly and systematically robbed the House Sparrow nests in the ivy on the American Museum, carrying off even well-fledged young. Mr. Weber spoke of Bronzed Grackles (*Q. q. aeneus*) robbing the nests of Red-winged Blackbirds (*Agelaius p. phoeniceus*).

The evening's lecture was by Mr. G. Kingsley Noble, on "The Harvard Peruvian Expedition of 1916." The speaker gave a narrative of the trip, which penetrated far into the Andes, and mentioned briefly some of the birds, reptiles, etc., of which he had made good collections. Lantern-slides of scenery and towns illustrated the talk.

October 14, 1919

The President in the chair. Fifteen members (Drs. F. M. Chapman, Dwight, and Janvrin, and Messrs. Chapin, Cleaves, Griscom, Hartshorn, Hix, Lang, Marks, J. T. Nichols, L. N. Nichols, Pearson, Rogers, and Weber) and five visitors (including Dr. Kunz, Mr. W. L. Sclater, and Mr. and Mrs. Charles W. Meade) present.

Mr. Hix reported Juncos (*Junco h. hyemalis*) at the Boy Scout Camp at Bear Mt., N. Y., August 7, and a Bald Eagle (*Haliaeetus l. leucocephalus*) and abundant Common Terns (*Sterna hirundo*) on the Hudson River near there, August 11. Dr. Dwight remarked that this past season the Juncos had bred further south than ever

* See same title in *Dental Cosmos*, March, 1920.

before, especially in southern New Hampshire, in considerable numbers.

Mr. L. N. Nichols reported a Spruce Grouse (*Canachites canadensis canadensis*) at Cranberry Lake, N. Y., this summer, and spoke of a scarcity of Thrushes there, the Veery (*Hylocichla f. fuscescens*) being the only *Hylocichla* present. He also mentioned a Hermit Thrush (*H. guttata pallasii*) that had visited Bryant Park, Manhattan, October 13, and fed on the counter of a stand there.

Mr. Rogers remarked that the Hermit Thrush was one of the most frequent birds to appear at unexpected spots in the city, and mentioned a few of the occasions when he had so noted it or heard of it. He also spoke of seeing a half-dozen White-crowned Sparrows (*Zonotrichia l. leucophrys*) and several small flocks of Siskins (*Spinus p. pinus*) in the Englewood, N. J., region, October 13, and hearing a chorus of Leopard Frogs (*Rana pipiens*).

Mr. Griscom reported seeing, with Dr. Janvrin, three Black Skimmers (*Rhynchops nigra*) flying off the coast of Long Beach, L. I., May 25; and, with Mr. W. DeWitt Miller, finding Northern Water-thrushes (*Seiurus n. noveboracensis*) apparently breeding in northwestern New Jersey this summer.

Dr. Chapman recorded the first-known successful nesting of the Red-headed Woodpecker (*Melanerpes erythrocephalus*) in the Englewood region, this past summer. The nest was at Englewood, and the young appeared and remained a month or so longer about the spot, being last seen September 20.

Dr. Chapman then spoke of the unusual advantages possessed by the Linnæan Society for the study of the bird-life about New York City, and moved that the President be empowered to appoint a committee who should begin collecting material for a new and very comprehensive list of the birds of the Fifty-mile Region, with detailed studies of the ranges of locally-distributed species (such as the Kentucky Warbler), the factors influencing such distribution and other local problems. The motion was carried.

Dr. Chapman also moved that the President be empowered to appoint a committee who should draw up resolutions which should express the Society's sorrow at the death of Mr. William Brewster. The motion was carried.

The program of the evening was then taken up, in accordance with which Dr. Dwight and Dr. Chapman gave addresses in the nature of a memorial to Mr. William Brewster, who died at his home in Cambridge, Mass., on July 11, at the age of sixty-seven.* While Mr. Brewster's published works were not very extensive (the most important being "The Birds of the Cambridge Region," probably the most excellent paper of the kind known), he will long be remembered for his thoroughly sterling qualities of every kind, for his inborn, consuming and ever-increasing love of birds, and for the inspiration that he was to his contemporaries, to the youngest and most amateurish of whom he was always free with kindly assistance.

* See "William Brewster: In Memoriam," by Frank M. Chapman, in *Natural History*, XIX, 738; also "William Brewster," by Frank M. Chapman, in *Bird Lore*, XXI, 277-286.

October 28, 1919

The President in the chair. Eighteen members (Drs. Dwight, G. C. Fisher, and Janvrin, and Messrs. Bowdish, Chubb, Granger, Hartshorn, Hix, F. E. Johnson, Lang, Marks, E. G. Nichols, J. T. Nichols, L. N. Nichols, Philipp, Rogers, Seton (Corresponding Member), and Weber and thirty visitors present.

Mr. Chubb told of birds he had observed last summer near Haines Falls, at an altitude of 2000 feet in the Catskill Mts. Warblers, of many species, were abundant, the most remarkable being a male Cerulean (*Dendroica cerulea*), an incessant singer, which was observed repeatedly, once carrying food. It was wary, however, and kept to the tree-tops, and no female was identified. Many Robins (*Planesticus m. migratorius*) were continuing the sylvan existence of their ancestors, and Mr. Chubb believed that some of the Swifts (*Chaetura pelagica*) were still nesting in hollow trees. He had found two Veery (*Hylocichla f. fuscescens*) nests well above the ground, 17 and 29 inches up, respectively, in tiny maple saplings. He spoke particularly of the singing of the Winter Wren (*Nannus h. hiemalis*), notable not only for its melody and volume, but also for its length, for the bird would sing a definite song averaging ten seconds in duration (compared with the Song Sparrow's (*Melospiza m. melodia*) of four seconds and the Bobolink's (*Dolichonyx oryzivorus*) of six), often at the rate of four times a minute for hours together.

Mr. Bowdish recorded a Robin nest at Demarest, N. J., which still contained young birds on September 15.

Mr. Ernest Thompson Seton gave a lecture on "The Kangaroo-Rat of the Desert," an account of his field-studies of the habits and structure of the large *Heteromys* of an arid part of southwestern North America. Mr. Seton had found only vegetable components in the food these animals had eaten, but he had strong circumstantial evidence that they fed freely on insects, and that the juices of these were the nearest approach to drink that the rats had, as no water was available. A striking structural feature was the enormous development of the bony labyrinth of the ear, which, Mr. Seton believed, gave the possessor the delicate sense of direction required to enable it to fly instantly to its nearest retreat when danger threatened, and to find its way about the extensive and complicated burrows. Lantern-slides illustrated these and other points of interest.

November 11, 1919

The meeting was omitted owing to conflict with the Annual Smoker of the American Ornithologists' Union.

November 25, 1919

The Vice-President in the chair. Eleven members (Dr. Janvrin, and Messrs. Chubb, Granger, Hix, Kieran, Lewis, Marks, J. T. Nichols, L. N. Nichols, Rogers, and Weber) and twenty visitors present.

Mr. J. T. Nichols read the following resolutions prepared by him and Dr. F. M. Chapman, who had been appointed by the President as a committee for that purpose:

"Resolved, that the Linnean Society of New York cause to be placed upon its minutes an expression of its appreciation of the invaluable services rendered to

the science of ornithology by the late William Brewster, and its regret that he was not spared to complete the work upon which he was engaged at the time of his death, the finished portion of which this Society hopes may, in due time, be published.

"Resolved, that a copy of this resolution be transmitted to Mrs. Brewster."

The following were the more unusual records reported: By Mr. Lewis, a Purple Martin (*Progne s. subis*) seen by him at Poughkeepsie, N. Y., November 9; by Mr. L. N. Nichols, a Tufted Tit (*Baeolophus bicolor*), seen by him in Bronx Park, November 19; by Mr. J. T. Nichols, a male Gadwall (*Chaulelasmus streperus*) taken by Mr. William Floyd at Mastic, L. I., November 3, and a Purple Gallinule (*Ionornis martinicus*) (juv.) taken on Church's Island, Currituck Sound, November 12, by H. F. Stone and now in a taxidermist's shop in this city, where the speaker had seen it; and by Mr. Rogers, a Catbird (*Dumetella carolinensis*) seen by him and Mr. Weber at Englewood, N. J., November 4, and by Mr. Hix at the same spot five days later, a Glaucous Gull (*Larus hyperboreus*) in adult plumage seen by him and Mr. S. V. LaDow at Long Beach, L. I., November 16, and a flock of some 65 Mourning Doves (*Zenaidura macroura carolinensis*) seen by him and Mr. D. P. Gilmore at Princeton, N. J., November 23.

The evening's lecture was by Miss Althea R. Sherman, who spoke on "Birds of an Iowa Door-yard." Miss Sherman had studied birds with remarkable diligence, care and accuracy about her country-place at National, Iowa, for many years, and had accumulated a great amount of interesting, first-hand information. At this time she spoke of many species, but particularly of Chimney Swifts (*Chaetura pelagica*) and Red-winged Blackbirds (*Agelaius p. phoeniceus*). Considerable discussion followed her talk.

December 9, 1919

The Vice-President in the chair. Twenty-one members (Dr. F. M. Chapman, Dr. Janvrin, and Messrs. Bowdish, Chapin, Gladden, Granger, Griscom, Hartshorn, Hix, J. M. Johnson, Kieran, Lang, Marks, J. T. Nichols, L. N. Nichols, Noble, Philipp, Rogers, Thayer, Walsh, and Weber) and nine visitors (including Miss A. R. Sherman, Dr. J. Bequaert, and Mr. W. L. Sclater) present.

The Secretary read a letter from Mr. E. W. Nelson, Chief of the U. S. Biological Survey, containing an offer from the Survey to take over the work of the American Bird-Banding Association. It was voted that the Society gratefully accept this offer, but that the records of past banding be kept at the American Museum until the end of 1920, in order that they might be more accessible to Mr. Cleaves (who still had his report to write), and also because all the Association's bands now on birds request the finder to notify that Museum. The Chair appointed Mr. J. T. Nichols as custodian of all bird-banding records, etc., for as long as they should remain in the American Museum.

Mr. Weber recorded an American Bittern (*Botaurus lentiginosus*) seen by him in the Hackensack, N. J., marshes, December 8. Mr. Rogers reported seeing a Lapland Longspur (*Calcarius l. lapponicus*) feeding with Horned Larks (*Otocoris a. alpestris*) at Long Beach, L. I., November 30, and (with Mr. W. DeWitt Miller) a flock of six Canada Geese (*Branta c. canadensis*) in a field in the Washington Valley, near Plainfield, N. J., on the foggy morning of December 7—Mr. Miller's first record for that species alighted

in the Plainfield region. Mr. Bowdish had seen a flock of sixty Canada Geese passing over Demarest, N. J., December 6, and there were other reports indicating a flight of these birds at about that time.

Mr. Granger recorded seeing at Princeton, N. J., a flock of twenty-five Killdeer (*Oxyechus vociferus*) November 29, which had grown to thirty-three next day. Mr. Kieran said he had found a Mourning Dove (*Zenaidura macroura carolinensis*) in Van Cortlandt Park, December 4, eating gravel in a road, and lots of Hermit Thrushes (*Hylocichla guttata pallasi*), a Brown Thrasher (*Toxostoma rufum*) and Fox Sparrows (*Passerella i. iliaca*) in the Hemlock Grove in Bronx Park on December 2.

Mr. Gladden told of watching a pair of House Wrens (*Troglodytes a. aedon*) nest-building at Yonkers, N. Y. The female brought material at the rate of thirteen trips in twenty minutes. The birds seemed to have no idea of how to get long twigs through the entrance hole and to succeed chiefly by chance, though the female seemed less inept than the male. He spoke also of a recent deer-hunting trip in New Brunswick and of the characteristic thievery of the Canada Jays (*Perisoreus c. canadensis*) about camp. By way of reproof to one he cut off an inch of its tail, but the bird appeared to like it. He mentioned that at a camp near Yonkers the voice of the Wood Pewee (*Myiochanes virens*) and Red-eyed Vireo (*Vireosylva olivacea*) were regularly the first heard on summer mornings, and Mr. Granger remarked that in the Huerfano Basin, Colorado, the Violet-green Swallow (*Tachycineta thalassina lepida*) had always been the first bird up, in his experience.

Mr. William Lutley Selater gave the Society a lecture on "Bird-Migration in South Africa." From his ten years' experience there, he classed its birds under five heads—residents; partial migrants; African migrants; European migrants; and oceanic species, mostly Tubinares, which winter on the coasts and retire to distant antarctic islands to breed. The European migrants include such well-known species as the White Stork (*Ciconia alba*) and the Swallow (*Hirundo rustica*), of each of which several individuals banded in northern Europe had been taken in South Africa. The Bee-eater (*Merops apiaster*), that breeds there commonly, has so far shown not even subspecific differences from the Bee-eater that breeds in the other half of the year in southern Europe, when none is to be found in South Africa; but it is most improbable that the same individuals breed in both regions, for there is no proof that *any* species that migrates across the Equator breeds at both ends of its range. The talk was illustrated with specimens and was followed by considerable discussion by Mr. Chapin, Dr. Chapman and others. It is noteworthy that passerine and picarian migrants from the northern continents winter much farther south in Africa than in South America, the much smaller expanse of tropic jungle in Africa probably being the influencing factor.

December 23, 1919

The President in the chair. Thirteen members (Drs. Dwight, G. C. Fisher, and Janvrin, and Messrs. Breder, Chapin, Davis, Hartshorn, Marks, J. T. Nichols, E. G. and L. N. Nichols, Philipp, and Thayer) and seventeen visitors present.

In the absence of the Secretary, the Chair appointed Mr. J. T. Nichols Secretary *pro tem*. The Secretary *pro tem* read a letter

from Mrs. William Brewster acknowledging resolutions on Mr. Brewster's death, sent her by the Society, and another letter, from Mr. A. C. Bent, of Taunton, Mass., calling attention to specimens of the Newfoundland race of the Red Crossbill (*Loxia curvirostra perna*) received by him this season from Chatham, Mass., Rhode Island, and Virginia, and requesting that local men be especially on the lookout for this race.

Mr. E. G. Nichols spoke of a Christmas Census made December 22 in the Van Cortlandt and Bronx Parks region, including two Robins (*Planesticus m. migratorius*), eight Creepers (*Certhia familiaris americana*), four Siskins (*Spinus p. pinus*), a Grackle (*Quiscalus quiscula* subsp.), eight Red-wings (*Agelaius p. phoeniceus*), and a Killdeer (*Oxyechus vociferus*) (Clason Point).

Mr. Davis reported an Indigo Bunting (*Passerina cyanea*) observed singing on the ground in Buckingham Co., Va. Dr. Janvrin had been at Long Beach, L. I., on December 21, with Messrs. W. L. Sclater and C. H. Rogers, and had seen two Lapland Longspurs (*Calcarius l. lapponicus*) with Horned Larks (*Otocoris a. alpestris*), two large flocks of Snow Buntings (*Plectrophenax n. nivalis*) aggregating perhaps 250, and four Ipswich Sparrows (*Passerculus princeps*) with three Savannah Sparrows (*Passerculus sandwichensis savanna*).

Mr. L. N. Nichols had looked up his November Catbird (*Dumetella carolinensis*) records on account of a reference to the status of that species at a recent Linnæan meeting, and found he had seen one at the upper end of Bronx Park on November 15, 1917. He further reported 70 Night Herons (*Nycticorax nycticorax naevius*) at Lake Agassiz, Bronx Park, December 7 of this year.

Mr. Griscom, who was to have spoken on Florida birds,* was unable to be present on account of illness, and Mr. J. T. Nichols, who had been associated with him on two recent trips to Florida, filled in with remarks on the same subject. He spoke of the absence of the Black Vulture (*Catharista u. urubu*) and Fish Crow (*Corvus ossifragus*) among the Florida Keys, and the presence there of the Turkey Vulture (*Cathartes aura septentrionalis*) and the Florida race of the Common Crow (*Corvus brachyrhynchos pascuus*); though in certain Florida localities, inland and coastal, the two former were the more abundant. This was explained on the ground that the first-named pair were less adaptable species, comparing among mammals to the Meadow Mouse (*Microtus pennsylvanicus*) contrasted with the White-footed Mouse (*Peromyscus leucopus*). In ordinary country, the White-foot is of the woodland and the Meadow Mouse of open meadow, but it is the adaptable *Peromyscus* which occurs in the sparse grass on the open, coastal sand-dunes, as also in the Hempstead Plains region at Garden City and Floral Park, L. I.

The song of the Pine-woods Sparrow (*Peucaea ae. aestivalis*) suggested to his ear the unlike songs of Pine Warbler (*Dendroica v. vigorsii*) and Hermit Thrush (*Hylocichla guttata pallasi*), as heard in a similar piny locality on Long Island. A Swallow-tailed Kite (*Elanoides forficatus*), poised in the wind, appeared to change the plane of the blade-like phlanges of its deeply-forked tail in

* See "A Revision of the Seaside Sparrows," by Ludlow Griscom and J. T. Nichols, pp. to 30 of this issue.

balancing. The abundance of the Black Tern (*Hydrochelidon nigra surinamensis*) well off the coast from New York to the Carolinas, as observed on a southward trip in early September of this year, was mentioned. This species, observed on Long Island in autumn migration, had seemed rather a marsh bird and was not expected over the ocean.

Observation of a Marbled Godwit (*Limosa fedoa*) in Florida introduced consideration of possible relationships among our *Scolopacidae*, indicated by their general characters and habits. It was

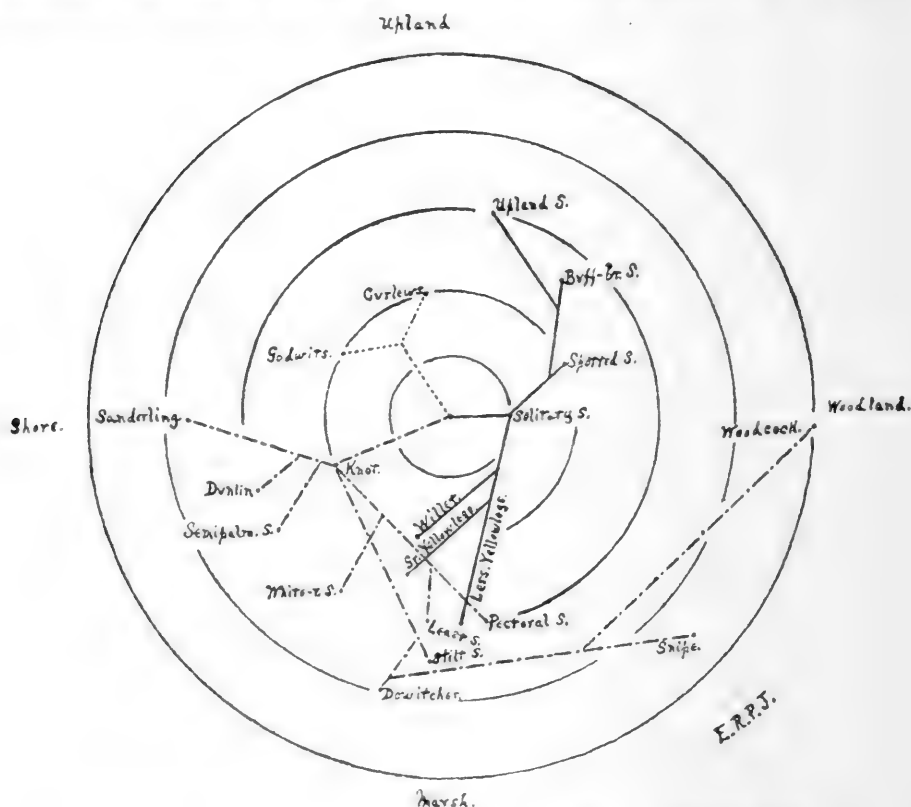


Diagram of local *Scolopacidae*, showing habitats and supposed lines of relationship. Distance from center indicates degree of specialization.

suggested that the Curlews and Godwits—with resemblances in plumage, appearance in life, deflected (though oppositely so) bill—might be related; that neither showed relationship to the Tattler series (no plumage resemblance and lacking Tattler mannerisms); that of that series the Solitary Sandpiper (*Helodromas solitarius*) was probably the most primitive, having resemblances alike to the Spotted Sandpiper (*Actitis macularia*), Yellowlegs (*Totanus*) and Willet (*Catoptrophorus semipalmatus*). Of the non-totanine series, the Knot (*Tringa canutus*) or some similar bird was most primitive. Possible correlation was pointed out between speciation and tendencies toward four habitats—woodland, shore, marsh and up-

land. A line of development was suggested, wherein one division of the group started with the Solitary Sandpiper in the woodland, another with the Knot at the shore. Among the Tattlers, in one direction the Spotted Sandpiper was less a woodland bird than the Solitary, the Upland Sandpiper (*Bartramia longicauda*) an upland bird; in the other direction marsh and shore species were derived—the two Yellowlegs, especially the Lesser (*T. flavipes*), marsh species, the Willet comparatively of the shore. The non-totanine series having originated its flexible bill for probing the loose sand of the shore between waves, reached the woodland with its most specialized Woodcock (*Philohela minor*), through the Dowitcher (*Macrorhamphus griseus*) and *Gallinago*.

A general discussion followed, wherein Dr. Fisher stated that the Common Crow (intermediate between *C. b. brachyrhynchus* and *C. b. pascuus*) was the only one he had found at DeFuniak Springs in western Florida; and Mr. Thayer said that in his experience non-breeding Terns had proved more pelagic, less littoral than Gulls, contrary to the generally accepted statement.

January 13, 1920

The President in the chair. Eleven members (Dr. Dwight, Dr. Janvrin, and Messrs. Adams, Gladden, Granger, Marks, J. T. Nichols, L. N. Nichols, Philipp, Rogers, and Weber) and seventeen visitors (including Mr. Charles Johnston) present.

Mr. Weber recorded a King Rail (*Rallus elegans*) taken in a muskrat trap at Leonia, N. J., December 13.

Mr. Gladden suggested that Canada Jays (*Perisoreus c. canadensis*) found temporary camps, which they so constantly visited, by smelling the smoke from afar. He had seen one of these birds, while on the wing, drop food from its beak and catch it in its claws. He also mentioned having twice heard an Ovenbird (*Seiurus aurocapillus*) interpolate notes of the Red-eyed Vireo's (*Vireosylva olivacea*) song into its night song.

Mr. L. N. Nichols reported seeing on December 26 two Horned Grebes (*Colymbus auritus*) on the big reservoir in Central Park, and a Pipit (*Anthus rubescens*) on its margin.

Two records were mentioned of the Towhee (*Pipilo c. erythrophthalmus*) in New England this winter—one by Dr. Dwight from Connecticut, January 1, and one from Maine (Dec. 3-28). The latter had been finally found dead and sent to the American Museum.

Mr. Granger told of a New Year's-time visit to Rutland, Vt., where he had found very few birds. A walk with another observer, from ten A. M. to five P. M., through open country and woodland had yielded twelve individuals of four species.

Mr. Rogers gave the following records of birds seen by him: A flock of thirteen Red Crossbills (*Loxia curvirostra*) feeding on Sweet Gum seeds in the Moravian Cemetery at New Dorp, S. I., December 27; a Rusty Blackbird (*Euphagus carolinus*) and a flock of ten Bronzed Grackles (*Quiscalus quiscula aeneus*) at West Englewood, N. J., January 11; Pine Siskins (*Spinus p. pinus*) still generally distributed in small numbers. He was then called on for the evening's paper, which he called "An Ornithological Glimpse of the Lesser Antilles." It was a description of a one-month trip

made by him in April and May, 1919, from New York to Demerara and return, calling each way at the same nine islands from St. Thomas to Barbados. First the speaker showed a series of lantern-slides very kindly loaned him by Mr. R. W. Miner, Dr. E. O. Hovey, Mr. G. K. Noble and the American Museum, illustrating the places visited; then told of the birds seen, and exhibited specimens of many of them. Considerable discussion followed.

January 27, 1920

The President in the chair. Nine members (Dr. Dwight, Dr. Janvrin, and Messrs. Chubb, Davis, Granger, Marks, J. T. Nichols, L. N. Nichols, and Rogers) and ten visitors (including Mr. Charles Johnston) present.

Mr. Chubb told of winter birds at his feeding-station near Van Cortlandt Park. Recently, snow conditions had been just right for studying tracks, and Mr. Chubb had noted that Tree and Song Sparrows (*Spizella m. monticola* and *Melospiza m. melodia*) ran much, as well as hopping, the latter taking a running step of five and a half inches; Juncos (*Junco h. hyemalis*) apparently did not run at all, but could hop over eight inches.

Mr. J. T. Nichols recorded a *Barnacle Goose (*Branta leucopsis*) recently taken on Long Island and now at a taxidermist's (Rowland's) in this city; a Wilson's Snipe (*Gallinago delicata*) seen by himself at Mastic, L. I., December 28 and January 17; and a Red-headed Woodpecker (*Melanerpes erythrocephalus*) seen by his brother at Syosset, L. I., December 27 and January 10. He also described the roosting-place used regularly by a Brown Creeper (*Certhia familiaris americana*) at Garden City, which was shown to him by Mr. L. V. Morris. It was a depression in the trunk of a Silver Maple, some seven feet from the ground, about the size of a man's hand and hardly more than deep enough to hold the bird. The Creeper was said to go to roost about four P. M., and flash-light inspection at night had revealed it clinging in its usual climbing position, but with head and bill concealed somewhere about its person.

Mr. Rogers reported a flock of one adult male and three green Red Crossbills (*Loxia curvirostra*) and an adult male White-winged Crossbill (*Loxia leucoptera*) found by him and Mr. Davis on January 25, feeding with a dozen Goldfinches (*Astragalinus t. tristis*) on Cut-leaved Ragweed in an open field at Great Kills Beach, S. I. The ice, which covered everything that day, probably kept them from feeding in the Sweet Gums and Pitch Pines in the woodland not far away. The flight-notes of the two species of Crossbill sounded much alike. Dr. Dwight remarked that on its breeding grounds the American Red Crossbill (*L. c. minor*) had a whistled flight-note to which the White-wing's was similar, but hoarser,—the relation being the same as between certain notes of the American Goldfinch and the Pine Siskin (*Spinus p. pinus*).

The evening's paper, "The Plumages of Gulls in Relation to Age," † was presented by Dr. Dwight. He showed how the members of the *Larinae* could be divided roughly into three groups;—small species, of which our only representative is Bonaparte's Gull

* Since placed on exhibition in the local collection of the American Museum of Natural History.

† See "The Plumages of Gulls in Relation to Age, as Illustrated by the Herring Gull (*Larus argentatus*) and Other Species," *The Auk*, XXXVII, 262-268.

(*Larus philadelphia*),—attaining fully adult plumage at the first post-nuptial molt; middle-sized species, such as the Kittiwakes (*Rissa*), Ring-billed (*Larus delawarensis*) and Laughing Gulls (*L. atricilla*),—attaining fully adult plumage at the second post-nuptial molt; and species the size of the Herring Gull (*L. argentatus*) and larger, which do not become fully adult in appearance until the third post-nuptial molt. The speaker exhibited series of specimens of Bonaparte's, Ring-billed and Herring Gulls, which showed clearly the different plumages passed through by each species, each immature plumage more like that of the adult than the preceding one had been. All Gulls known to Dr. Dwight had a post-juvenal molt, and after that two molts each year,—the pre-nuptial one (like the post-juvenal) involving more or less of the head and body plumage, but not the wings or tail. First-year Gulls could almost invariably be told from older birds by the comparatively pointed, instead of rounded, tips of the primaries and the rounded, instead of squarish, tips of the rectrices. The speaker concluded by saying that all he had said applied to the generality of Gulls, but that there was much individual variation in the time taken to acquire adult plumage, and that males averaged more precocious than females and could usually be distinguished by their greater measurements, particularly of the bill. Considerable discussion followed.

February 10, 1920.

The Vice-President in the chair. Nine members (Messrs. Adams, G. C. Fisher, Granger, Marks, J. T. Nichols, L. N. Nichols, Philipp, Rogers, and Weber) and four visitors (Mr. and Mrs. Charles Johnston and Messrs. Laidlaw Williams and R. Friedman) present.

Dr. Fisher proposed for Resident Membership Mr. John B. DeMille, now a student at Columbia University, and the name was referred to the Membership Committee.

Mr. L. N. Nichols reported a Mockingbird (*Mimus p. polyglottos*) on February 9, in the north-east corner of the Botanical Garden, Bronx Park,—the same spot where perhaps the same bird had lived in previous winters. His son and Mr. Clark Lewis had seen a Tufted Tit (*Baeolophus bicolor*) in the south-east corner of Bronx Park February 8. Mr. Nichols also corrected an error made in his "Summer Birds of Cranberry Lake, N. Y.," read before the Society January 14, 1919. The Tree Sparrows (*Spizella m. monticola*) therein recorded had since been shown to have been White-throated Sparrows (*Zonotrichia albicollis*).

Mr. Rogers recorded an immature Iceland Gull (*Larus leucop-terus*) seen by him and Mr. Hix along the New Jersey shore of the Hudson River above Fort Lee on February 1.

The discussion of the erratic northern Finches, which had been announced as the evening's program, was taken part in by those present, and in addition the Secretary read letters on this subject kindly written by Messrs. Eugene P. Bicknell, Beecher S. Bowditch, Lee S. Crandall, Maunsell S. Crosby, and Frederick W. Kobbé.

The following records of occurrence this season were made:—

Evening Grosbeak (*Hesperiphona v. vespertina*).—A female in the northern part of Bronx Park, Feb. 1 (Kobbé) and 8th (E. G. Nichols and Clark Lewis); a flock of 20 at Forest Hills, L. I.,

Feb. 3,—one of them injured and taken to the Bronx Zoo (Crandall); a flock at Arlington, N. J., observed by Messrs. O. P. Medsger and G. A. King.

Pine Grosbeak (*Pinicola enucleator leucura*).—None further south than Rhinebeck, N. Y., where 3 were seen Jan. 28, and 11 Feb. 4 (Crosby).

Purple Finch (*Carpodacus p. purpureus*).—A few individuals wintering, but no flocks, at Rhinebeck (Crosby); a flock of 40-50 wintering at Demarest, N. J. (Bowdish).

Red Crossbill (*Loxia curvirostra*).—A flock of 10 at Hewlett, L. I., Nov. 18 (Bicknell); a flock of 13 at New Dorp, S. I., Dec. 27 (Rogers); a flock of 4 at Great Kills, S. I., Jan. 25 (W. T. Davis and Rogers); flocks of about 7 and 2 at Garden City, L. I., Feb. 7 (J. T. Nichols).

White-winged Crossbills (*Loxia leucoptera*).—Three at Rhinebeck, Jan. 29 (Crosby); 2 in Bronx Park, Jan. 1, (the male captured), and 5 more on Feb. 8 (Crandall); a male at Great Kills, S. I., Jan. 25 (Davis and Rogers).

Redpoll (*Acanthus l. linaria*).—Arrived Dec. 1 at Cruger's Island, N. Y., and seen almost daily since Christmas in various parts of Dutchess County (Crosby); following the north-east storm of Feb. 4-5, during which 22 inches of snow fell, nearly everyone who went afield that Sunday (Feb. 8) found Redpolls generally distributed,—Bronx Park (E. G. Nichols); Prospect Park, 3 (Granger); the Palisades, N. J., 12-15 (Rogers); etc.

Pine Siskin (*Spinus p. pinus*).—Present throughout Nov. to Dec. 1 in various parts of Dutchess County, and a flock Jan. 10 and 11th at Poughkeepsie (Crosby); arrived in the vicinity of New York City Oct. 13 (Long Beach, L. I., common, Bicknell; Englewood, N. J., five flocks aggregating 40 or more, Rogers), and irregularly abundant ever since (Bicknell, Bowdish, L. N. Nichols, Rogers, etc.).

The following notes on the food of these species, from this and former winters, were given.—

Evening Grosbeak.—The only bird that cracks the seeds of Flowering Dogwood (Rogers); Hackberry (Fisher,—observed by Medsger and King); Sunflower (Granger); buds of Maples (Weber).

Pine Grosbeak.—Rose (*Rosa rugosa*) hips (Bicknell); seeds of Ash and Ash-leaved Maple (Crandall); tips—rarely seeds—of Jack Pine and buds of Spruce (Weber).

Purple Finch.—Tulip (*Liriodendron*) seeds, Giant Ragweed seeds, Honeysuckle berries, Flowering Dogwood berries (pulp, not seeds), Beech (Rogers).

Red Crossbill.—Evening Primrose, at Rockaway Beach (Weber); Sweet Gum and Cut-leaved Ragweed seeds (Rogers).

White-winged Crossbill.—Evening Primrose, at Rockaway Beach (Weber); Sweet Gum seeds (Crandall); Sweet Gum and Cut-leaved Ragweed seeds (Rogers).

Redpoll.—Generally on birch, alder and weed seeds; both White and Black Birch, and Evening Primrose; also scale insects (Rogers).

Pine Siskin.—Seeds generally; of Seaside Goldenrod and Evening Primrose (Bicknell); Seaside Goldenrod, Timothy, Sweet Gum (Rogers); Burdock (L. N. Nichols); also on aphids on apple-trees (Granger).

February 24, 1920.

The President in the chair. About eighty members and visitors present; among the former being Dr. Dwight, and Messrs. Chapin, Chubb, Davis, Gladden, Granger, Griscom, Hix, F. E. Johnson, Kieran, Lang, E. G. Nichols, J. T. Nichols, L. N. Nichols, Noble, Philipp, Thayer, and DeMille (elected at the meeting).

In the absence of the Secretary, the Chair designated Mr. J. T. Nichols Secretary *pro tem*.

Mr. J. B. DeMille, whose name had been proposed at the preceding meeting, was elected to Resident Membership.

Redpolls (*Acanthis l. linaria*) were reported from the vicinity of Yonkers (Gladden, Johnson, Kieran); Bronx Park (Laidlaw Williams); Broadway and 246th St. (Chubb); western Long Island, generally distributed (J. T. Nichols); Staten Island, Amagansett and Montauk, L. I. (Griscom). Mr. Johnson had noticed them apparently gleaning food by carefully going over maple twigs, something after the manner of Chickadees (*Penthestes a. atricapillus*), and one or two others present had made a similar observation.

Evening Grosbeaks (*Hesperiphona v. vespertina*) were reported from near Yonkers (Feb. 21, male and female at Napera Park) and Van Cortlandt Park (Feb. 14, four reported to him by one of his Boy Scouts), (Gladden); Ward's Hill, S. I. (Feb. 21, six, W. T. Davis); and Amityville, L. I. (Feb. 23, about twenty, J. T. Nichols).

Mr. Hix reported tracks of a covey of Bob-whites (*Colinus v. virginianus*) at Van Cortlandt Park. The birds had been seen by a Boy Scout.

Mr. E. G. Nichols had seen a Red-headed Woodpecker (*Melanerpes erythrocephalus*) at North Tarrytown, N. Y., February 23. Mr. L. N. Nichols reported a Kingfisher (*Ceryle alcyon*) in the Bronx, February 18, on which date he had also positively identified as Kittiwakes (*Rissa t. tridactyla*) two small Gulls flying across a peninsula in the East Bronx. They had pure white underparts and tails, black feet, pale yellow bills, black markings at the end of the wings and indistinct marks on the back of their heads. The rarity of this species away from the actual sea-coast came in for comment, but he felt sure of the identification.

Mr. Griscom had visited Bronx Park on February 14, observing a Tufted Tit (*Baeolophus bicolor*). On February 15, in company with Dr. Janvrin, he had found the remarkable number of 20 Long-eared Owls (*Asio wilsonianus*) in the Moravian Cemetery, New Dorp, S. I. On February 22 at Amagansett, L. I., also with Dr. Janvrin, a number of Buffleheads (*Charitonetta albeola*), (a Duck generally becoming rare), had been observed, and on the 23rd, at Montauk, they had seen an exceptional number of American Scoters (*Oidemia americana*) (about 400 birds just off the surf), four Glaucous (*Larus hyperboreus*) and two Iceland Gulls (*L. leucopterus*).

The rarity of the Tufted Tit east of the Hudson River coming up for discussion, Mr. L. N. Nichols said that he and Mr. E. G. Nichols had never found it in Bronx Park until this season, during which they had seen a single bird there several times.

The paper of the evening was by Mr. William Beebe, on work at the tropical research station of the New York Zoological Society in British Guiana. The speaker's time had recently been occupied with his Pheasant monograph, and before turning to South America, he sketched the history of the domestic fowl (the best-known Pheasant), originally domesticated by the Chinese, and reaching Egypt from Asia, through Europe. Slides bearing on interesting subjects in natural science available in the British Guiana jungle, from monkeys to termites through parrots and fish, were touched on. Attention was called to the comparatively gentle transition in such a tropical environment from the often mud-filled water to the water-saturated air, as perhaps having bearing on the place of origin of non-aquatic vertebrates. There was opportunity to examine photographs and sketches of Guiana animals after the meeting adjourned.

March 9, 1920.

Annual Meeting. The President in the chair. Twenty-three members (Drs. Dwight, G. C. Fisher, Janvrin, and Morris, and Messrs. Adams, Bowditch, Chapin, Chubb, Davis, Fleisher, Granger, Griscom, Hix, F. E. Johnson, J. M. Johnson, Marks, Murphy, J. T. Nichols, L. N. Nichols, Noble, Pearson, du Vivier, and Woodruff) present. The meeting was preceded by the Eighth Annual Dinner in the Mitla Room of the American Museum, attended by thirty-eight members and visitors.

In the absence of the Secretary, the Chair appointed Mr. J. T. Nichols Secretary *pro tem*. The Treasurer read his Annual Report, and the Chair appointed Messrs. Nichols and Chapin as Auditing Committee.

The Annual Report of the Secretary was read, as follows:—

During the past year, the Linnæan Society has held fifteen meetings,—the first November one was omitted owing to conflict with a meeting of the American Ornithologists' Union,—with a total attendance of 461. The Seventh Annual Dinner was attended by twenty-four members and fourteen guests, and twenty-three members and thirteen visitors were present at the Annual Meeting the same evening. At the remaining fourteen meetings, the total attendance averaged thirty, that of members thirteen;—that is, the attendance of members equaled that of the preceding year, but there were fewer visitors. The largest number present at any one meeting was eighty (on February 24), of members twenty-one; the smallest was eleven.

The Society has during the past year lost by death one Corresponding Member (Dr. C. C. Abbott) and one Resident Member (Mr. Woodbury G. Langdon); two Resident Members have resigned, three have been dropped for arrears in dues, and three new ones have been elected. The membership list now stands:—Resident, 81; Corresponding, 26; Honorary, 4; total, 111.

Sixteen papers have been presented before the Society,—nine of them primarily on birds, three on the general natural history of distant expeditions, two memorials to William Brewster, one on a mammal and one on evolution. One evening was devoted to a discussion of the erratic northern Finches.

The Society has issued its *Abstract of Proceedings* No. 31, 65 pages, containing the minutes of the year ending March 11, 1919, and "Bird-Banding by Means of Systematic Trapping," 35 pages and 7 plates (14 photographs), by Mr. S. Prentiss Baldwin. This paper is one of the most important the Society has published and has attracted widespread interest. Separates of it have been sent to the mailing-lists of the American Ornithologists' Union, the Wilson Ornithological Club and the Cooper Ornithological Club.

The bird-banding work, so long carried on under the able management of Mr. Cleaves under the auspices of the Linnæan Society, has, since the assumption by Mr. Cleaves of other duties, been turned over to the United States Biological Survey at the latter's request.

Your Secretary is heartily sorry that he is unable to be with you to-night, and thanks you sincerely for having considered him, these last five years, worthy to hold the position he has tried hard to fill.

CHARLES H. ROGERS,
Secretary.

Mr. Bowdish spoke of the Evening Grosbeak (*Hesperiphona v. vespertina*) at Demarest, N. J., March 5 and at Tenafly, N. J., a week previous. He also spoke of alleged damage done to fruit trees by the Purple Finch's (*Carpodacus p. purpureus*) eating buds, which in some places was rather beneficial pruning, in others probably too extensive to be beneficial.

Mr. Chubb had seen an Opossum (*Didelphys virginianus*) at Broadway and 246th St., and Mr. Hix had observed the Rusty Blackbird (*Euphagus carolinus*) at Van Cortlandt Park.

Dr. Janvrin spoke of a single Evening Grosbeak at Amityville, L. I., February 26; Dr. Fisher, of a Saw-whet Owl (*Cryptoglaux a. acadica*) and a number of Long-eared Owls (*Asio wilsonianus*) in a grove of Spruce at Douglaston, L. I., February 29. Mr. Laidlaw Williams had observed the Tufted Tit (*Baeolophus bicolor*) in Bronx Park, February 28.

Following these notes, Mr. Robert Cushman Murphy spoke of his recent trip to Peru; of the cold Humboldt Current, wherein the water is coldest in a narrow belt close to shore; of the great abundance of bird-life over this cold water; the guano islands of this coast, *et cetera*.

*A REVISION OF THE SEASIDE SPARROWS

By LUDLOW GRISCOM and J. T. NICHOLS

Introduction

In the *Auk* for January, 1899, Dr. Chapman reviewed the Seaside Sparrows. The bird of the southern Texas coast was kept as a species, nomenclatural points of *macgillivraii* were discussed and settled, and *fisheri* was described as new. For many years but little additional material or information accumulated, and the only change was the relegation of the Texas bird to subspecific rank under *maritimus*, an action endorsed by Mr. Ridgway in his *Birds of North and Middle America*, and sustained by the last A. O. U. Check-List.

The last few years have seen a rapid accumulation of desirable material from the Gulf Coast region, due chiefly to Mr. Arthur H. Howell and his assistants in collecting for the Biological Survey. This resulted chiefly in the acquisition of breeding material from Mississippi and Alabama, and more recently the discovery of a new species at Cape Sable; and a breeding series from Port Richey, Fla., was the first definite proof that *peninsulae* bred in any part of its known range.

In December, 1915, one of the authors (L. G.) during a brief visit to the northwest coast of Florida, near St. Marks, collected an anomalous Seaside Sparrow, which wiser heads than his shuffled from one race to another. Both authors visited this locality last spring and collected another anomalous bird, after which the first serious effort was made to settle its affinities. Our studies of available material showed the necessity of acquiring more, so another trip was made last September, the series then collected confirming our suspicions that we had stumbled upon an undescribed race.

Shortly before our last trip to Florida, Mr. Howell visited the American Museum of Natural History, and we had a little discussion about Seaside Sparrows. Mr. Howell informed us that his bird from Alabama was apparently undescribed, and wanted to know whether our Florida bird was the same. When he learned our suspicions, and that we were about to make a second trip to Florida to settle the question, he most generously offered us all his material with the request that we work up the whole group, and we cannot too strongly express our appreciation. Stopping off at Washington on his way north, one of the authors (L. G.) discovered that Dr. Oberholser had planned to revise the group. He also most generously yielded the field to us, and further supplied us with such MS. notes as he had written on the already recognized races. At this point our acknowledgements are due the authorities of the Biological Survey and the National Museum for the loan of such material as we asked for, and again to Dr. Oberholser for his kind offices in expediting these loans. Dr. J. Dwight has permitted us the use of his fine series of perfectly prepared

* Abstract read before the A. O. U., November, 1919.

specimens, and Dr. Louis B. Bishop has also most courteously forwarded over 130 specimens from New Haven.

With nearly 700 specimens at our disposal, probably the largest series of these birds ever gathered together, we have spent over two months in considering the problem, trying to arrive at some sort of an orderly and logical interpretation of the facts. One puzzling factor remains to be mentioned, and that is the well-known wear of the plumage. The absolutely fresh plumage lasts only a few weeks, after which a certain amount of fading takes place. To speak very generally, little change takes place until the breeding season is well under way, when abrasion becomes very rapid and marked, in a comparatively short time wiping out practically all distinguishing characters. To be particular, however, practically every individual shows a slight difference in degree and rapidity of wear, and let no one suppose that it follows of necessity that February specimens of two races are *ipso facto* comparable material. The distinguishing characters that we give, however, apply regardless of wear to comparable material, with the exception of extremely worn breeding birds which frequently are little more than dark above and lighter below.

Size, too, has been found to be of practically no value. Measurements of our large series show such complete intergradation of all races that even average differences of wing measurements are rarely in higher figures than tenths of millimeters. The tail length is, in our opinion, absolutely worthless, being purely a matter of individual wear, as a series of birds from the same place on the same day show a variation of nearly thirty percent.

In the following pages we recognize three species and seven races of *maritimus*, two of which are described as new. We have not investigated the generic value of *Thryospiza*, and retain *Passerherbulus* for the sake of uniformity with the A. O. U. Check-List. A description of the juvenal plumage is appended at the end of the remarks on each species and race.

Systematic Account

***Passerherbulus mirabilis* (Howell)**

Thryospiza mirabilis Howell, Auk, Jan. 1919, p. 86 (Cape Sable, Fla.).

Range.

Cape Sable, Florida.

Remarks.

This well-marked species has the underparts whiter than any other member of the group, except *nigrescens*, but the streaking below is not so dark or so heavy as in that form. It is the lightest and greenest of the Seaside Sparrows, and has more yellow around the eye than any other. Only February specimens are known. These are of great interest because of their plumage, which for freshness cannot be matched by any other Seaside Sparrow taken anywhere later than November. It is highly desirable that specimens be collected at other seasons of the year, in order that its plumage-wear can be studied.

had seen at least a dozen pairs on the date mentioned), and of how the tiny chicks froze when alarmed, while those a bit older ran. He had seen five Least Terns (*Sterna antillarum*) there on May 29. Both he and Mr. J. T. Nichols mentioned the remarkable lateness of last year's northward shore-bird migration, and the latter quoted Mr. E. P. Bicknell as seeing the last northbound Semipalmated Plover (*Ægialitis semipalmata*) and the first southbound Least Sandpipers (*Pisobia minutilla*) on the same date in early July.

Mr. L. N. Nichols recorded the Towhee (*Pipilo e. erythrophthalmus*) wintering in East Bronx as still present February 13.

Mr. J. T. Nichols read notes comparing the birds seen at Mastic, L. I., February 16 and 17, 1918, after an exceptionally severe winter, with those seen February 22 and 23, 1919, after an exceptionally open one, with remarks on the behavior of certain species as winter residents and as transients.

Mr. J. T. Nichols also gave the paper of the evening, on "The Voices of Shore-Birds." Years of taking advantage of unusual opportunities for the study of this group as transients on Long Island, N. Y., had made the speaker familiar with the notes used under those circumstances. He now gave a résumé of what he had learned of the language of each of our local species,—the use and significance of their various cries, with speculation on homologies (cases of the evident relationship of common origin between the notes of allied species) and analogies (notes, of different species, having the same significance though they may or may not be homologous). Whistled imitations of the notes discussed, illustrated the talk.

March 11, 1919.—Annual Meeting. The President in the chair. Twenty-three members (Doctors Dwight, G. C. Fisher, Janvrin, Morris; Mrs. Reichenberger; Messrs. Bowdish, Boyle, Breder, Davis, Granger, Hartshorn, Hix, F. W. Hyde, F. E. Johnson, J. M. Johnson, Lang, Marks, J. T. Nichols, Pearson, Rogers, Thayer, Weber, Valentine) and thirteen visitors present. This meeting followed immediately the

Society's Seventh Annual Dinner, held in the Mitla Room of the American Museum and attended by twenty-four members (as above, less Mr. Valentine and plus Mr. Murphy and Mr. Woodruff) and fourteen guests.

Mr. Howarth S. Boyle, whose name had been proposed at the previous meeting, was elected to Resident Membership.

The name of Mr. Gladwyn Kingsley Noble, a former member of the Society and now in the herpetology department of the American Museum, was proposed by Mr. Nichols for Resident Membership; it was referred to the Membership Committee.

In the absence of the Treasurer, his Annual Report was read by the Secretary; it showed a balance of \$2,597.21 to the Society's credit, which was about \$150 greater than the balance of a year ago.

The Secretary then read his Annual Report, as follows:

During the past year the Linnæan Society has held fifteen meetings—the second December meeting was omitted owing to its falling on Christmas Eve—with a total attendance of 525. The Sixth Annual Dinner was attended by twenty-one Resident Members and seventeen guests, and these members and eighteen visitors were present at the Annual Meeting the same evening. At the remaining fourteen meetings the total attendance averaged thirty-five, that of members thirteen, both figures a decided increase over those of the preceding year. The largest number present at any one meeting was 230, on March 26 (of members, twenty-one); the smallest was eleven.

The Society has during the past year lost by death one Corresponding Member, Colonel Theodore Roosevelt, and two Resident Members, Mr. Gerard Beekman and Mr. Walt F. McMahon; one has resigned, and seven new ones have been elected. The membership list now stands: Resident, 85; Corresponding, 27; Honorary, 4; total, 116.

Fourteen papers have been presented before the Society, chiefly on birds. The papers were illustrated with lantern-slides, museum specimens, charts, etc.

On September 18 was issued the Society's *Abstract of Proceedings* No. 30, 38 pages and a plate, containing the minutes of the year ending March 12, 1918, and "Bird-notes from Florida," by Mr. J. T. Nichols, and "Bird Temperatures," by Mr. J. A. Weber.

CHARLES H. ROGERS,
Secretary.

winter specimens of the same breeding bird from the same locality fail to show the slightest approach to *peninsulae* in those respects which we consider diagnostic or important, and we might add that the dark form of *macgillivraii* is much more readily distinguished in comparatively fresh winter plumage than in worn breeding plumage. It is also significant that this specimen cannot be made to match exactly any *peninsulae* in any plumage and to us it seems unquestioned that its approach to *peninsulae* is certainly a question of wear and apparently individual.

It may be pertinent at this point to call attention to the fact that Dr. Allen in his original description of *peninsulae*, actually mentions the diagnostic character of this race, though at that time there was not the slightest reason for emphasizing it. "Above the feathers *dull brownish*, edged broadly with olive and gray rest of underparts suffused with *brownish ash*" The italics are ours. Can there be a better testimony to painstaking accuracy and care?

Worn July specimens of *macgillivraii* may be told from *maritimus* only by the slight traces of streaks still present on the crown; the darker auricular region and the blackish as opposed to dark ashy malar stripe.

Juvenal.

Upperparts decidedly darker than in *maritimus*, blackish streaked with gray and more or less washed with brown; superciliary stripe varying from cream-buff to ochraceous-buff; underparts white, the breast and sides washed with cream-buff to ochraceous-buff, thickly and finely streaked with black or almost immaculate, less buffy below than *maritimus* with the streaking more variable.

Passerherbulus maritimus howelli subsp. nov.

Type.

No. 231131, U. S. Nat. Mus., Biological Survey Collection; ♂ adult, Dauphine Isl., Alabama, Feb. 13, 1912; collected by E. G. Holt.

Distinguishing Characters.

Close to *maritimus* and *macgillivraii*, the tone of the upperparts most like *maritimus*, paler than *macgillivraii*, slightly more olive, less grayish than either. The crown streaked like *macgillivraii*, though less conspicuously so; the nape immaculate like *maritimus*. The back with broad ill-defined markings. The underparts darker, more extensively washed with gray than in either, and in fresh specimens the breast is deep ochraceous-buff, deeper than in any other race, except *fisheri*. In material examined the bill averages slightly larger than any other Gulf Coast race. Bill measurements: ♂, 14-15.1 mm. (aver. 14.3 mm.); ♀ 13.8-14.5 mm. (aver. 14.1).

Description of type.

Center of crown and nape narrowly ashy gray; their sides olive-rufous, streaked with black; back grayish olive, broadly streaked with fuscous, the feathers margined laterally with ashy; rump

grayish olive; yellow mark before the eye, a broad greenish gray stripe above and behind it; a pale buff stripe from the base of the bill borders the grayish auricular region below, to turn upward as an ochraceous-buff wash behind same; malar stripe slaty gray; throat white; underparts grayish, strongly washed with ochraceous-buff on the breast, diffusely and obscurely streaked with darker gray; lower belly soiled white; under tail-coverts buffy, streaked with gray; bend of the wing yellow, the exposed portion of adjoining coverts rufous; primaries grayish brown, margined externally with grayish green; inner secondaries blackish margined with pale rufous; tail grayish brown, the feathers margined basally and externally with grayish olive.

Measurements.

Type (adult male), wing, 62; tail, 56.5; exposed culmen, 15.1; tarsus 21. Average of 8 adult males: Wing, 60-64 (61.9); exposed culmen, 14-15.1 (14.3); 7 adults females: Wing, 51.5-62 (59.2); exposed culmen, 13.8-14.5 (14.1). The tails are too worn to make their measurements of any value.

Fully worn specimens (July) are uniform grayish olive-brown above; the throat white; the underparts uniform ashy gray. Compared with equally worn *peninsulae*, they are slightly paler, less slaty above and below. The size of the bill will usually be a clue in separating this race from other Gulf Coast races in very worn plumage.

Range.

Breeding on the coast of Alabama (Dauphine Isl.; Bayou La Batre; Petit Bois Isl.) and Mississippi (Grande Batture Isl.; Horn Isl.). Resident, but straggling in winter to East Goose Creek, Wakulla Co., Florida, Dec. 31, 1915 (Cornell Univ. Museum; coll. by L. Griscom); High Island, Tex., Oct. 30, 1916 (absolutely typical specimen, collection of J. Dwight, No. 44511). The Goose Creek bird is not typical, being darker, especially on the crown, with deeper rufous wing-coverts, as though an approach to the bird breeding there.

Remarks.

We take pleasure in naming this new race for Mr. A. H. Howell, who has added so much to the knowledge of Seaside Sparrows in recent years.

He informs us that this race is not found in the typical salt marshes, but prefers the *Iva* bushes on the outer islands. It is comparatively tame and unobtrusive, and is much more readily detected and collected as a result of its habits than other races.

Juvenal.

The single specimen is almost indistinguishable from a young *macgillivraii* with pale, almost unmarked breast. Its crown is more reddish olive, less black, and its bill slightly larger.

Carolina; one, a Sparrow Hawk, taken fifteen miles away from where it was banded; and one, a Flicker, taken two miles distant. But, during that time I have retaken by trap, from one year to another, more than sixty birds, and some of those have been taken not only the second, but also the third and fourth years. In five weeks, in Thomasville, Georgia, in 1917, I recorded 25 birds from 1916 and six from 1915.

Birds not frightened away by the trapping; "Repeats": The birds regard the trap as a special feeding table, and come to it day after day. I have released the same bird three times in one hour; I have frequently released the same bird four or five times in one day; and I coined the word "repeats" to distinguish, in my notes, these birds from "new." "Repeats" are so numerous that of nearly seven hundred birds handled in five weeks, in Georgia, two-thirds were "repeats" and only one-third "new." One Brown Thrasher, on two successive spring seasons in Georgia, spent most of every day in the trap. And a Cardinal became such a nuisance, by getting into the trap and keeping others away, that I moved the trap to another location. In summer one may keep almost daily record of certain Song Sparrows nesting nearby, and in migrations one may know the day an individual bird comes, and the day he moves on. One learns to know the characters of certain individuals, as I came to know a certain White-throated Sparrow, who always identified himself by fighting and biting my fingers; and another White-throat, who distinguished himself as a squealer.

How much time or trouble? In presenting the following report, as the result of four or five years' effort, it is only fair to explain how little time and how scattering an effort has been possible to the writer.

The work at Gates Mill, near Cleveland, has been carried on during five summer seasons; but I do not go to the farm until some time in the month of May, or first of June, after all spring migration is over; then by mid-July I am usually gone for an absence of six weeks; and then return to the farm for September and October. This limits the work to six weeks of nesting time in spring, and perhaps two months in

the autumn, at a time when many birds have formed flocks or started southward. Not only is the Ohio work thus limited, but when living on the farm, I am in the city three days a week, so, with stormy days or other things to interfere, I can run the traps only two or three days in a week.

The work at Thomasville, Georgia, has been carried on for only three seasons, 1915, 1916 and 1917. From three to five traps are run on every clear day, and I can give them very regular attention, but my whole season at Thomasville is, usually, only five weeks of February and March.

I explain with so much detail the rigid restrictions under which these observations were made, because I have realized so fully that my best opportunities for steady and consistent observation are repeatedly lost by my long absences.

I urge this upon the bird student who may consider these methods of work, for it is certain that any person who lives all the year in one place, in the country, or on the edge of town, can obtain much greater scientific result with much less effort, than my haphazard work costs me.

While this report includes only the "Returns" of birds taken from one year to another, it is evident that not less important, to a person who operates traps at the same place all of a season, or all of a year, is the opportunity, by this method, of keeping in touch with the daily life of birds living in the vicinity; of knowing just when they come; just when young leave the nest; just how long they remain in the vicinity; and when they leave; and watching the exact movements of individual birds during migration. Indeed, the careful observer, in a fixed location, may obtain facts of greater scientific value on the daily records than from the reports from year to year.

How to trap: Bait the ordinary sparrow-trap with cracked grain and bread. The grain should be ground fine, what is usually sold as the finest or first chick food, and scattered thinly to a distance of five feet from the trap. The soft parts of the bread may be very finely divided by rolling in the hands, but save the crusts and larger pieces and drop them inside the trap.

streaked with darker gray; a faint cream-buff tinge on the breast; under tail-coverts buffy, marked with darker; bend of wing yellow, the exposed portion of adjoining coverts dark rufous; primaries fuscous, margined laterally with dark grayish olive; inner secondaries black with narrow paler margins; tail fuscous with incomplete darker bars, and dark grayish olive lateral margins basally.

Measurements.

Type (adult male), wing, 60; tail, 48 (very worn); exposed culmen, 12.9; tarsus, 20. Averages, 4 adult males, wing, 57.5-61.2 (59.2); exposed culmen, 12.3-12.9 (12.6). One adult female, wing, 58.2; exposed culmen, 12.1. The tails of these specimens are either too worn or else not completely grown in, making their measurements of no value. Three adults, unsexed (!) (coll. Biological Survey) with fully grown tails taken in November measure as follows: No. 268891, wing, 60; tail, 54; exposed culmen, 13; No. 268893, wing, 61; tail, 51; exposed culmen, 13.2; No. 268892, wing, 58.3; tail, 52; exposed culmen, 12.1. Very possibly the first two are males and the last a female.

The absolutely fresh unfaded fall plumage is black above, the crown with a few faint streaks of slate-gray and reddish olive, the nape strongly washed with olive, and the back practically devoid of olive tinge. Malar stripe and region below the eye black. Streaking of underparts black. Fading takes place very rapidly, the pure black becoming blackish or very dark gray in November specimens, while the olive wash on the upperparts becomes stronger. The March specimen (the type) differs from the November birds only in that the black on the upperparts has become still more suffused and obscured with olive. Fully worn post-breeding birds are unknown, but we doubt if they will prove distinguishable from comparable material of *peninsulae* or *fisheri*, unless blacker.

Range.

Known only from the type locality, which is eight miles west of St. Marks, and apparently at St. Marks. Dr. Bishop has forwarded us six specimens, two of them juvenals, from St. Marks, collected by John Williams in April, as breeding birds. Two of these birds are absolutely worn, are indistinguishable from similar *peninsulae*, but might be *juncicola*. The two young birds, however, are indistinguishable from young *peninsulae*, but do not resemble young *juncicola* in our collection, which is much the darkest of all the *maritimus* races. Of the remaining two adults, one, the least worn, and taken after the fully worn birds mentioned above, is unquestionably *juncicola*. The other is apparently intermediate between the two. It looks therefore as if St. Marks was somewhere near the boundary line of the two races, but the material at hand is too scant to determine the question definitely. It is possible from the evidence presented above, that the breeding-bird is *peninsulae* or an intermediate, and that the *juncicola* in less worn plumage was not actually breeding. Fresh material collected in late August and early September can best settle this question.

Remarks.

The most remarkable thing about this race is its extremely local

habits, being confined to dense patches of *Juncus roemerianus*, a harsh and stiff plant about five feet high, which grows in dense stools, forming large patches, which are almost impenetrable. This Sparrow lives in the heart of these clumps and is excessively shy and retiring in its habits, and we have never encountered a more difficult bird to collect. In the breeding season it has a song, which is recognizably different from that of *maritimus*, impressing one as being longer and more complicated. It also has a flight-song not suggestive at all of the northern Seaside Sparrows, a few weak Song Sparrow-like notes.

Juvenal.

Upperparts as dark as *fisheri*; superciliary between cream-buff and ochraceous-buff; underparts soiled whitish, the breast and sides more extensively washed with ochraceous-buff than in any other race, and streaked with black, the streaks broader than in other races, and a few black marks even present in the throat.

Passerherbulus nigrescens (Ridgway)

Ammodramus maritimus var. *nigrescens* Ridgway, Bull. Essex Inst., V, Dec. 1873, p. 198 (Merrit Island, Florida).

This bird is too well known to require any review in this paper. The juvenal, however, has been collected, a description of which is appended. Upperparts black, streaked with grayish brown especially on the back; underparts grayish white, the breast and sides extensively washed with pale grayish buff, and broadly streaked with black.

KEY TO THE SPECIES AND SUBSPECIES OF SEASIDE SPARROWS

- a. Underparts with the ground color pure white with distinct black streaks.
 - b. Streaking of underparts comparatively light; above very greenish; a yellowish postocular stripe (Cape Sable, Florida) *Passerherbulus mirabilis*.
 - bb. Streaking of underparts very heavy; above chiefly black; no yellow postocular stripe (Merrit Island, Florida),
Passerherbulus nigrescens.
- aa. Underparts never as above, the ground color always gray, grayish or buffy.
 - c. Upperparts without distinct black streaks (Atlantic coast).
P. maritimus maritimus.
 - cc. Upperparts with distinct black streaks.
 - d. Paler; above with distinct black streaks on a greenish gray ground; ground color below pale (coast of Texas).
P. m. sennetti.
 - dd. Darker; ground color above never greenish gray; grayish, olive, or blackish; darker than pale gray below.
 - e. Chest, sides and flanks grayish, with little if any buff, never deep buff.
 - f. A brownish cast throughout, especially noticeable on the back, malar stripe and breast streaks; streak-

ing of underparts usually quite distinct. (Gulf Coast of Florida, from St. Marks southward).

P. m. peninsulae.

ff. No brownish cast throughout; streaking of underparts diffuse, broader and rarely very distinct.

g. Paler; crown sharply streaked; edgings to wing-coverts dull pale rufous; above chiefly olive and gray with little blackish; breast usually noticeably tinged with light buffy (South Atlantic States)*P. m. macgillivraii*

gg. Much darker; crown rather uniformly dark; edgings to wing-coverts deep rufous; above heavily washed with black or blackish; breast very slightly or not at all tinged with buffy (NW. Gulf Coast of Florida)*P. m. juncicola.*

ee. Chest, sides and flanks conspicuously deep buffy.

h. Paler; chiefly grayish and olive above; streaking below diffuse and grayish (Alabama and Mississippi).

P. m. howelli.

hh. Much darker; chiefly blackish above; streaking below fine and usually distinct (Louisiana and Texas).

P. m. fisheri.

RELATIONSHIPS AND DISTRIBUTION

A general survey of the races of *maritimus* shows one or two interesting facts which are worth pointing out. With the exception of *maritimus* and *macgillivraii* on the Atlantic coast which do intergrade, there is no logical progressive variation by races. It would be hard to show that five different climates occurred on the Gulf coast to account for the five races found there. *Peninsulae* is succeeded by the very dark *juncicola*, followed by the lighter *howelli* and much darker *fisheri*. So it is not possible to say that as we go south or west the birds get lighter, smaller, or darker.

These facts call for an explanation, and it is surely within the realm of legitimate speculation, though it would be ridiculous to dogmatize. There are two possible points of view. One is to say that there are two species, a light *maritimus-sennetti* type, and the other a dark *peninsulae-juncicola-fisheri* type. *Macgillivraii*, the puzzling birds on the south Atlantic coast, are logically enough explained as hybrids with all the well recognized phenomena of Mendelian mutation. The Alabama *howelli* is another hybrid in the other direction, and finally we remove the difficulty in the possibility of *sennetti* and *fisheri* breeding ranges overlapping. Unfortunately we do not consider this theory tenable, owing to the fact that it is impossible to find good specific characters for the two proposed species.

Much the more plausible theory to our minds is the application of Matthew's law of dispersal and distribution, which, being briefly stated, is that the more primitive forms occur on the periphery of the range of a group and the most specialized at the center

of dispersal. Applying this point of view to the Seaside Sparrows we have *mirabilis*, *sennetti*, and *maritimus*, the former at least approaching the Sharp-tails, situated to the extreme north, west and south. *Nigrescens*, the most peculiar form, in a central locality, and those of intermediate darkness variously distant.

One more suggestive parallel is here pointed out for the benefit of future workers in this interesting group. We have been struck with the fact that color variation (from light to dark) has varied in our field experience with the density of the marsh vegetation in which the various races live. Take the well-known flora and appearance of a Long Island or New Jersey salt marsh as typical. No marked changes occur until we get south to South Carolina, where the assemblage of species is slightly different and the vegetation in which the Seaside Sparrow lives is higher and more luxuriant. There we find a darker *macgillivraii*. On the north-west Gulf coast of Florida, the salt marsh flora is totally different, principally dense stools of *Juncus roemerianus*. The Sparrow found here is the darkest of all the races of *maritimus*. The Alabama *howelli* is said by Mr. Howell to live mostly in the *Iva* bushes of the outer islands. It is noticeably paler. Such Texas salt marsh as one of the authors has seen impressed him as remarkably open and sparse, so it is scarcely surprising that the Texas bird should again be a pale form.

We have had no field experience with salt marshes in south Florida, Mississippi or Louisiana, so can make no statements regarding vegetative characters in them. This prevents our making any flat assertion of fact, but we do claim that our evidence is sufficiently striking to deserve further attention. It is obvious that the amount of light that a group of plants is able to stop, or the amount of shade they are able to create, is the factor involved. Any botanist can see that there is less light in the heart of a dense stool of *Juncus* than in the middle of an *Iva* bush or a patch of *Salicornia* or *Spartina patens*. It is obvious, therefore, that the question of light depends upon the *habit* of the plant, making the *species* of the plant usually, though not invariably, the ultimate cause. It seems reasonable to suppose that birds would respond in some way to this factor of light, just as they do to a humid versus an arid climate. At any rate we advance this proposition for consideration in the hope that ornithologists with some botanical knowledge and experience will be able to throw further light on a *dark* subject, which is quite in line with our suspicions.

MATERIAL EXAMINED

Passerherbulus mirabilis.—5 specimens from Cape Sable.

P. maritimus maritimus.—275 specimens—adults and young. Breeding birds from Rhode Island, Connecticut, Long Island, New Jersey, and Virginia. Fall, winter and spring birds from Connecticut, Long Island, South Carolina, Georgia and northeastern Florida.

- P. m. sennetti*.—38 specimens—adults (every season of the year) and young, from Texas.
- P. m. macgillivraii*.—132 specimens. Adults (every season of the year) and young from North Carolina, South Carolina, Georgia and northeastern Florida.
- P. m. howelli*.—22 specimens. Adults (May, July, August, October, December and February) and young, from Florida, Alabama, Mississippi and Texas.
- P. m. fisheri*.—67 specimens. Adults (every season of the year) and young from Alabama, Louisiana and Texas.
- P. m. peninsulae*.—31 specimens. Adults and young from the Gulf coast of Florida (March, April, May, October, November and February). No material in absolutely fresh unworn plumage in existence.
- P. m. juncicola*.—13 specimens. Adults and young from northwestern Florida (September, November, March and April).
- P. nigrescens*.—50 specimens from Merritt Island, Florida. Adults and young (March and April). Apparently no material ever collected in any other months.

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ABSTRACT
OF THE PROCEEDINGS OF THE
LINNAEAN SOCIETY
OF
NEW YORK

For the Four Years Ending
March 25, 1924

CONTAINING
Notes on the Winter Bird Life
of Southeastern Texas
By T. Gilbert Pearson

Date of Issue, November 1, 1924

RECEIVED
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PROCEEDINGS
OF THE
LINNAEAN SOCIETY OF NEW YORK

A NEW AMEIVA FROM NEVIS ISLAND,
BRITISH WEST INDIES

BY KARL PATTERSON SCHMIDT

A small collection in The American Museum of Natural History from the island of Nevis, in the northern group of the Lesser Antilles, contains a single specimen of an *Ameiva*. This genus occurs in nearly all of the Lesser Antilles and its occurrence on Nevis is not surprising, though the fact that there have been no recent records of these lizards may indicate that it is now extinct.

While closely related to the *Ameivas* of the neighboring islands, the form on Nevis appears to warrant description as a distinct species.

Ameiva nevisana, new species

Diagnostic Characters

Caudal scales straight and keeled; ventral plates in twelve longitudinal rows; nostril anterior to the nasal suture; four supraoculars; antibrachials not continuous with the brachials; a band of enlarged scales across the throat; nine scales border the vent anteriorly, the outer minute, the two adjacent to the median scale largest; a large oval preanal in front of this series; two very large tibials; color pattern consisting of more or less transverse rows of white spots on a darker ground color.

Range

Confined to Nevis Island, British West Indies.

Type

A. M. N. H. No. 1635, male; Nevis Island, British West Indies. (An old specimen probably collected before 1890.)

Description of Type

Rostral forming an acute angle behind; anterior nasals narrowly

in contact behind the rostral; nostrils in the posterior part of the anterior nasal; frontonasal six-sided, nearly as wide as long, in contact equally with the posterior nasals and the loreals; prefrontals as long as the frontal; anterior borders of the frontal emarginate; four supraoculars, the first separated from the loreal by the first supraciliary; eight supraciliaries separated from the three posterior supraoculars by a double row of granules; frontal in contact with the first and second supraoculars; two frontoparietals, separated from the supraoculars by a row of granules, double posteriorly; five subequal occipitals in a transverse row; five upper labials to center of eye, fourth largest; lower labials separated from the chin shields by a row of small scales posteriorly expanded into a group of four large flat scales; ventral plates in twelve longitudinal and thirty-six transverse rows; a wedge of the lateral granules extends between the ends of the transverse rows; a broad band of enlarged scales across the throat; enlarged scales on the collar in three rows; brachials proximally in three rows, distally in one, widely separated from the six large transverse antebrachials; a small group of postbrachials near the elbow; femorals in ten or eleven rows; tibials much enlarged, two outer plates very large; caudal scales straight, keeled, thirty-two in the fifteenth verticil; femoral pores 21-22.

Color (much faded) bluish gray, anteriorly vermiculated with black, more heavily on the arms; posterior part of dorsum and upper surfaces of legs spotted with white, the spots on the back arranged in irregular transverse rows; venter uniform bluish gray with a small median black pectoral spot.

Measurements

Tip of snout to vent.....	135 mm.
Tip of snout to posterior edge of tympanum...	34 mm.
Breadth of head.....	18 mm.
Arm	50 mm.
Leg	84 mm.

This form is most closely allied to *Ameiva pleii*, which Barbour and Noble (1915, Bull. Mus. Comp. Zool., Cambridge, LIX, p. 447) locate on St. Martin and St. Bartholomew. In the possession of twelve rows of ventral plates it is intermediate between *A. pluvianotata* (Montserrat) and *A. erythrocephala* (St. Kitts) on one hand, and *A. griseus* (Antigua) on the other. It may be distinguished most readily from *Ameiva pleii* by the fewer occipitals, the middle one entire, the much larger antebrachials, and the presence of a median posterior preanal.

SOME NEW AND RARE AMPHIBIANS AND REPTILES FROM CUBA

BY KARL PATTERSON SCHMIDT

Among the collections of amphibians and reptiles from Cuba in The American Museum of Natural History are several species of interest, and two species of tree frogs of the genus *Eleutherodactylus* which appear to be undescribed. The Department of Herpetology is especially indebted to Mr. Barnum Brown for important collections of amphibians and reptiles from this island.

Eleutherodactylus gundlachi, new name

Sierra Maestra Range (A. M. N. H. Nos. 6445-47).

Eleutherodactylus plicatus Barbour, 1914, Mem. Mus. Comp. Zool., Cambridge, XLIV., p. 244, is pre-occupied by *E. plicatus* (Günther), 1900, Biologia Centrali-Americana, Reptilia and Batrachia, p. 228. I take pleasure in naming the species after the distinguished Cuban naturalist.

Eleutherodactylus sierra-maestrae, new species (Plate 1, Fig. 1)

Diagnostic Characters

Toes without webs; digital disks well developed; belly smooth; back coarsely tubercular, without folds or plicæ; tympanum distinct; vomerine teeth in two long curved series, narrowly separated on the median line, extending laterally beyond the choanæ; head broad; plantar and palmar tubercles well developed; hind limbs cross-barred.

Range

Known only from the Sierra Maestra Range, in the Province of Oriente, Cuba.

Type

A. M. N. H. No. 6450, male, Sierra Maestra Range, Cuba; collected by R. H. Beck, August 1918.

Description of Type

Head as wide as body; heels overlap when the legs are placed at right angles to the body; heel reaches nearly to the tip of the snout; nostril much nearer to tip of snout than to eye; upper eyelids narrower than the interorbital space; tympanum two-thirds the diameter of the eye, separated from it by half its diameter. Disks of fingers and toes large, twice as wide as the digits; digits entirely without webs; first finger shorter than the second by the width of its disk; first toe reaching a little beyond the first sub-articular tubercle of the second; plantar and palmar tubercles well developed. Belly entirely smooth; skin of back coarsely tubercular, but without ridges or plicæ. Tongue broad, truncate behind; vom-

erine teeth in two long, curved series, narrowly separated on the median line, and extending laterally beyond the outer borders of the choanæ.

Brownish gray above, mottled with very dark brown; throat and chest uniform brown; belly and under surfaces of legs lighter, the legs spotted with brown; upper and outer surfaces of legs and arms barred.

Measurements

Length from snout to vent.....	38 mm.
Head from snout to posterior border of tympanum	16 mm.
Greatest breadth of head.....	15 mm.
Foreleg from axilla.....	26 mm.
Hind leg from vent.....	68 mm.

Eleutherodactylus sierra-maestrae does not appear to be very closely related to any other Cuban species. The large digital disks distinguish it at once from the species with similar vomerine teeth, while the absence of webs and the coloration amply distinguish it from the following species.

***Eleutherodactylus brevipalmatus*, new species.** (Plate 1, Fig. 2)

Diagnostic Characters

Toes with short but evident webs; digital disks well developed; belly smooth in the center; back finely granular; tympanum distinct; vomerine teeth in two long transverse series, narrowly separated on the median line, extending laterally as far as the outer borders of the choanæ; head broad; plantar and palmar tubercles well developed; hind limbs not barred; dark above with a light dorsolateral line on each side.

Range

Known only from the Sierra Maestra Range, Province of Oriente, Cuba.

Type

A. M. N. H. No. 6448, female, Sierra Maestra Range, Cuba, collected by R. H. Beck, August 1918.

Description of Type

Head wider than the body; heels overlap when the legs are placed at right angles to the body; heel reaches the tip of the snout when the leg is extended along the body; nostril much nearer to tip of snout than to eye; upper eyelid narrower than the inter-orbital space; tympanum about half the diameter of the eye; its distance from the eye about two-thirds its diameter. Disks of toes large, twice as wide as the digits; toes with short webs, reaching to the first joint; first finger slightly shorter than the second; first toe reaching to the first subarticular tubercle of the second; plantar and palmar tubercles well developed. Belly smooth at the center, sides and femurs finely granular; skin of back finely granular, without folds, tubercles, or plicæ. Tongue narrow, oval behind; vomerine teeth in two nearly straight transverse series well behind the choanæ, extending laterally as far the outer edges

of the choanæ, separated on the median line by a narrow interspace.

Dark above with a light dorsolateral line on each side from the orbit to the groin; limbs finely mottled beneath; tarsus with light rings; under side grayish brown, mottled with darker brown.

Measurements

Length from snout to vent.....	37 mm.
Head from snout to posterior border of tympanum	16 mm.
Greatest breadth of head.....	16 mm.
Foreleg from axilla.....	25 mm.
Hind leg from vent.....	64 mm.

Notes on Paratype

The single paratype (A. M. N. H. No. 6449) is a male, measuring 30 mm. from snout to vent. There is no evident vocal sac; the tympanum is larger; the dorsolateral lines are absent; and the tarsi are more distinctly ringed.

This species appears to be very distinct from the majority of Antillean species of *Eleutherodactylus* in the presence of webs between its toes.

Key to the Species of *Eleutherodactylus* in Cuba

1. { Belly smooth, at least at center..... 2
- { Belly granular 5
2. { Digital dilations large.....*E. sierra-maestrae*
- { Digital dilations small..... 3
3. { No ventral disk; skin of back smooth...*E. dimidiatus*
- { A ventral disk; skin of back rough..... 4
4. { Heels overlapping; thighs pink.....*E. cuneatus*
- { Heels fail to meet; thighs not pink.....*E. ricordii*
5. { Digital dilations large..... 6
- { Digital dilations small..... 7
6. { Toes distinctly webbed.....*E. brevipalmatus*
- { Toes without webs.....*E. auriculatus*
7. { Vomerine teeth in short oblique series; back granular*E. varians*
- { Vomerine teeth in short oblique series; back plicate*E. gundlachi*

Anolis cyanopleurus Cope

Sierra Maestra Range (A. M. N. H. Nos. 12884-91). Collected by R. H. Beck, August 1918.

Tropidophis semicinctus (Gundlach & Peters)

Santa Clara (A. M. N. H. No. 7386). The single specimen was taken under a rock, January 30, 1918, by Mr. Barnum Brown. The dorsal scale rows are 23-25-19; ventrals, 212, subcaudals, 39.

Tretanorhinus variabilis Duméril & Bibron

Santa Clara (A. M. N. H. No. 7387). Collected January 30, 1918, by Mr. Barnum Brown. Taken under a rock, on land, this speci-

men affords an example of occasional terrestrial habits in this species.

***Arrhyton vittatum* (Gundlach & Peters)**

Santiago (A. M. N. H. No. 2949). Collected by S. H. Hamilton.

This specimen agrees fairly well in coloration and scale count with *A. vittatum*, the median dorsal stripe being well defined. The dorsal scales are 17-17-17, the ventral plates 127, the subcaudals 72. The prefrontals are fused to form a single shield, but the beginning of the normal median suture is present anteriorly.

The close correspondence of this specimen with *A. redimitum* might furnish additional reason for assuming that that species was founded on an abnormal specimen. The subcaudals, however, are said to be 120 in the specimen of *A. redimitum* at Muséum d'Histoire Naturelle in Paris, and if this count is correct, the species is probably a valid one.

A NEW CYCLURA FROM WHITE CAY, BAHAMA ISLANDS

BY KARL PATTERSON SCHMIDT

In the course of the identification of the West Indian amphibians and reptiles in The American Museum of Natural History a specimen of *Cyclura* of an apparently distinct and undescribed species was found. This may be known as follows:

***Cyclura cristata*, new species**

Diagnostic Characters

Allied to *Cyclura rileyi* Stejneger; anterior head shields slightly enlarged, flat, not at all swollen; frontal not tubercular, scarcely enlarged; nuchal and dorsal sections of the dorsal crest subequal; dorsal crest interrupted on the shoulders and rump; twenty spines in the nuchal, sixty-six in the dorsal section of the crest; anterior dorsal spines fully as high as the posterior.

Range

White Cay (north of Watling's Island), Bahama Islands.

Type

A. M. N. H. No. 7238 (skin and skull), White Cay, Bahama Islands; T. B. Enders, donor, 1908.

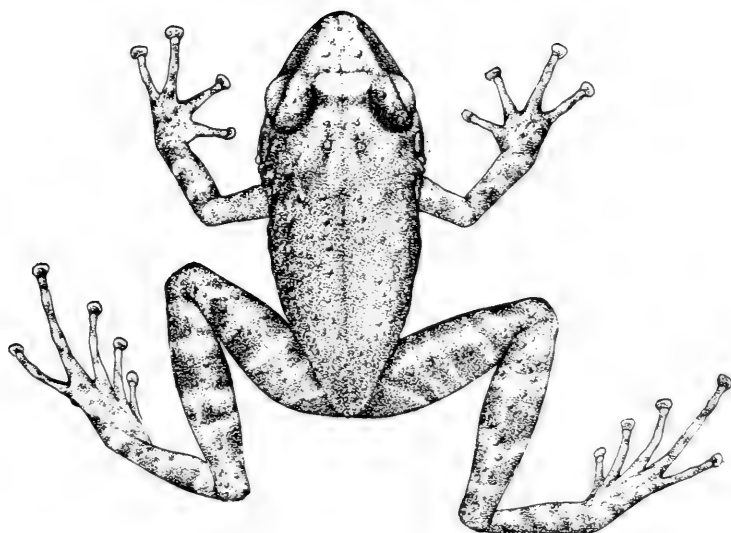


Figure 1. *Eleutherodactylus sierra-maestrae*, new species.
Type, (A.M.N.H. No. 6450), natural size.

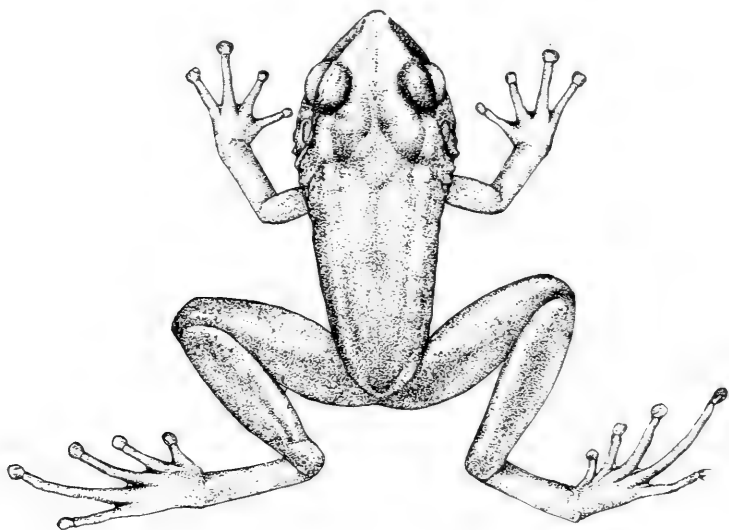


Figure 2. *Eleutherodactylus brevipalmatus*, new species.
Type, (A.M.N.H. No. 6448), natural size.

Description of Type

Rostral wider than mental, broadly in contact with the nasals; nasals large, in contact on the median line; a pair of postnasals in contact, followed by a series of four enlarged scales on each side, the third the largest, separated by one or two rows of median scales; the last two of these series in contact with a small frontal; largest anterior head shields very slightly swollen; remaining head shields flat, rarely with a low tubercle; occipital slightly enlarged; a patch of enlarged temporals, of which the lower posterior scale is more or less tubercular; seven enlarged supralabials to the middle of the eye; ten enlarged sublabials; sublabials separated posteriorly from the enlarged chin shields by two rows of scales; posterior chin shields bluntly keeled or tubercular; canthal scales slightly enlarged; eleven scales in a vertical row between the upper labials and the last canthal; a large tubercular shield on each side beneath the eye; four tubercular shields on the anterior border of the ear opening; dorsal scales very small; a nuchal crest composed of twenty spines, the median longest (12 mm.); a dorsal crest, separated from the nuchal, of sixty-six spines, subequal, with the exception of the few first and last (the longest 9 mm.); crest on the base of the tail somewhat higher than on the back; tail sharply verticillate, four spinose median scales to each verticil; outer scales of limbs somewhat larger than the dorsals; keeled "comb" on the second toe of three lobes each; femoral pores, twenty-two.

Color dark gray, obscurely mottled with yellow, especially on the limbs and throat.

Length	730 mm.
Tail	410 mm.
Head	70 mm.

This species is closely related to *C. rileyi* from the neighboring Watling's Island, but appears to be readily distinguished by the high dorsal crest of fewer spines (sixty-six as compared with seventy-six) and the different arrangement of the anterior head shields. It belongs to the *carinata* group of more primitive *Cyclurus*.



ABSTRACT

OF THE PROCEEDINGS OF THE

LINNÆAN SOCIETY

OF

NEW YORK,

FOR THE FOUR YEARS ENDING MARCH 11, 1924.

THIS is the thirty-third in the series of *Abstracts* published by the Linnæan Society of New York, closing volume 33 of the *Proceedings* of the Society, and is prepared mainly as a brief review of the work of the Society during the year closing with the date indicated above. Papers presented before the Society and published elsewhere (often enlarged or otherwise different in form) are mentioned with proper reference to the place of publication.

March 23, 1920.—The President in the chair.

The President announced that the office of Secretary had not been filled at the Annual Meeting on March 9, 1920, as Mr. J. T. Nichols had not obtained the three-fourths vote necessary for his election. The Council thereupon called on Dr. Janvrin to act as Secretary during the ensuing year. By the favorable action of the Society Dr. Janvrin's appointment was confirmed.

The President then appointed the following committees:

Membership: Messrs. J. T. Nichols, Chubb and L. N. Nichols.

Finance: Messrs. Woodruff, Granger and Rogers.

Papers and Lectures: Drs. Janvrin and Fisher and Mr. Rogers.

Publications: Messrs. Griscom and J. T. Nichols and Dr. Janvrin.

Local Avifauna: Messrs. J. T. Nichols, Griscom and Rogers.

The subject of a local list of the birds of the New York City region, to be published by the Society, was discussed at length, and the Committee on Local Avifauna was asked to report on the matter at the next meeting.

Dr. Dwight stated that most of the scientific journals and magazines were overcrowded with material at the present time, and suggested that the Linnæan Society might accept short papers on vertebrate zoology and publish them from time to time during the year as leaflets. The matter was discussed and referred to the Committee on Publications for consideration.

Mr. Granger told of a trip to Northport, L. I., which he and Dr. Janvrin had taken on March 21. Golden-eye (*Clangula c. americana*) and Old Squaw (*Harelda hyemalis*) ducks were especially numerous. Six Red-headed Woodpeckers (*Melanerpes erythrocephalus*) were seen,—probably wintering birds.

Mr. Griscom reported that he had seen Fish Crows (*Corvus ossifragus*) and a melanistic Rough-legged Hawk (*Archibuteo lagopus sancti-johannis*) in the Overpeck Marshes on March 21. He also spoke of a Woodcock (*Philohela minor*) reported from Staten Island on March 14, and one on the 17th in New York City.

Mr. L. N. Nichols had seen a drake Shoveller (*Spatula clypeata*) in the Baychester marshes, East Bronx, on March 22.

Mr. Hix had seen a Black-backed Gull (*Larus marinus*) on the Hudson River near the 130th street ferry on March 14, and a Red-headed Woodpecker (*Melanerpes erythrocephalus*) and a Duck Hawk (*Falco peregrinus anatum*) at Grantwood, N. J., on March 21.

Mr. Crosby reported his first Phœbe (*Sayornis phæbe*) for the season on March 23, and Canada Geese (*Branta c. canadensis*) flying north on the 15th, although at that time the Hudson was still completely frozen over.

Mr. Gladden reported a Bluebird (*Sialia s. sialis*) on March 3 in Van Cortlandt Park.

April 13, 1920.—The President in the chair.

Mr. Granger reported seeing a flock of 57 Evening Grosbeaks (*Hesperiphona v. vespertina*) at Rutland, Vt., on April 4.

Mr. Rogers spoke of the scarcity of Golden-crowned Kinglets (*Regulus s. satrapa*) since Christmas. He had seen 2 at Picton, N. J., on March 28, 2 at Teaneck, N. J., on March 31, and 2 at South River on April 4. On the last date, with Mr. Wm. DeW. Miller, he had observed Black Ducks (*Anas rubripes*), Pintails (*Dafila acuta*), Baldpates (*Mareca americana*) and Green-winged Teals (*Nettion carolinense*)—also a solitary Yellow Palm Warbler (*Dendroica palmarum hypochrysea*).

Dr. Janvrin had seen 8 Ruddy Ducks (*Erismatura jamaiensis*) on the Overpeck Creek on April 8, and, with Mr. Griscom, a pair in the same locality on April 11.

The paper of the evening was by Mr. Alfred E. Emerson, entitled "Studies of British Guiana Termites." Mr. Emerson had found about seventy species of "white ants" within a mile of the Guiana Experiment Station of the New York Zoölogical Society, including a number of new genera and species. He said that the Termites, forming the order Isoptera, were a group of primitive insects that had developed social habits and different castes of individuals very similar to those found among the highly specialized order Hymenoptera. The individuals were divided into queens, males, soldiers and workers. He described the mating flight of the queens and males, the behavior of the soldiers and workers under different conditions, and the building of the nests. He found that the species that built arboreal nests used simply wood and a secretion from their bodies in their construction, while those nesting on or near the ground also used dirt.

Mr. Herbert Lang supplemented Mr. Emerson's paper with a short talk on the Termites of the Congo region. He spoke of the natives fighting for the possession of Termite hills, and said that they used the insects as food.

Both papers were illustrated by lantern-slides showing the country, insects and their nests. Mr. Lang also showed pictures of ant-eaters and other mammals that feed on the Termites.

April 27, 1920.—The President in the chair.

Dr. Fisher reported 4 Evening Grosbeaks (*Hesperiphona v. vespertina*) observed at Douglaston, L. I., from March 20 to April 9, and 1 seen in the same locality on April 26. He had also found a dead Common Shrew (*Sorex personatus*) near Douglaston on April 11.

Mr. Rogers reported the following records for the Englewood, N. J., region: On April 18, with Mr. W. H. Wiegman, a pair of Baldpates (*Mareca americana*) on the Overpeck Creek. On April 24, an early Nashville Warbler (*Vermivora r. rubricapilla*). On April 25, with Mr. Hix, 3 American Mergansers (*Mergus americanus*) and an adult Bald Eagle (*Haliaeetus l. leucocephalus*). With Mr. Hix, he had seen a Duck Hawk (*Falco peregrinus anatum*) in Central Park on April 22.

Mr. Rogers also reported for Mr. Griscom a Kingbird (*Tyrannus tyrannus*) in Central Park on April 23, and a list of 49 species of birds observed by Mr. J. T. Nichols at Mastic, L. I., from April 23 to 26, including a pair of American Mergansers and one Lesser Yellowlegs (*Totanus flavipes*).

A most interesting paper was presented by Mr. Harold E. Anthony, of the American Museum, entitled "A Zoölogical Reconnaissance of Jamaica, B. W. I.," illustrated by lantern-slides and specimens. Mr. Anthony had spent four months on the island investigating the mammalian fauna, both living and fossil, with the object of determining whether Jamaica had formerly been a part of a great Antillæan land mass or had been connected with Central America. He described the three main ecological areas of the island—the mountainous region of heavy rainfall and almost impenetrable forests in the north, the dry coastal plain in the southeast, and the intermediate region of low hills and moderate rainfall, where he had done most of his collecting. He described the many caves of this area, where he had found innumerable fossils imbedded in masses of conglomerate, and also spoke of the many species of bats now living on the island, and of the native Indian Coney (*Geocopromys brownii*). Although he

had not had time to work up his material thoroughly, he thought that the theory that Jamaica had formerly been connected with Honduras was the most likely one.

May 11, 1920.—The President in the chair.

Mr. Lee S. Crandall, whose name had been proposed at the preceding meeting, was elected a Resident Member of the Society.

The report of the Committee on Publications was read by the chairman, Mr. Griscom. It made the following recommendations:

1. That all scientific papers be published immediately upon presentation.
2. That the bid of Messrs. Clark and Fritts, of New York City, be accepted, as reasonable in price and insuring speed.
3. That the issue of each paper be a minimum of 500 copies—the author, whenever possible, to contribute toward the publication expenses, and in any event to pay for all copies in excess of 500; non-members to pay the entire cost of publication.

A motion to approve and accept the committee's report, with an amendment limiting the number of author's separates to 25, and to give the committee full power of accepting and publishing papers, was unanimously carried.

The report of the Committee on Local Avifauna was then read by Mr. Griscom, in the absence of the chairman, Mr. J. T. Nichols. The Committee recommended:

1. That active preparation of the local avifauna list be started immediately.
2. That the area included should be New Jersey, north of a line running approximately east and west along the Raritan River; New York State, from a line running from the New Jersey boundary on the Hudson River straight across to the Connecticut boundary, and including all of Long Island.
3. That this area be further subdivided into seven regions where bird-life is particularly abundant and which have been investigated continuously for many years—each region to be written up by a recognized authority.

A motion to accept the report and to urge the committee to proceed with the work was carried unanimously.

Under field observations, the Blue-gray Gnatcatcher (*Poliop-tila c. cærulea*) was reported from Bronx Park on May 7 by Mr. L. N. Nichols, and from Van Cortlandt Park on April 30 by Mr. Kieran, who also had seen a pair of Hooded Mergansers (*Lophodytes cucullatus*) in the latter locality on March 25.

Mr. Hix reported two uncommon birds in Central Park—2 Crows (*Corvus sp.?*) on May 3, and a Cowbird (*Molothrus a. ater*) on May 7.

Mr. Crosby, in a letter to Dr. Dwight, told of seeing 2 Caspian Terns (*Sterna caspia*) on the Hudson River near Rhinebeck, N. Y., on April 30. He had had a good view of the birds through field-glasses, had noted the large size and red bills and was sure of his identification.

May 25, 1920.—The President in the chair.

The Secretary read a letter from Mr. E. W. Nelson, Chief of the U. S. Biological Survey, stating that the Survey had taken over the work of the American Bird-Banding Association, giving an outline of its plans for future work, and asking for the continued coöperation of the Linnæan Society.

Mr. Chapin reported for the Auditing Committee that the Treasurer's report had been examined and found correct.

Mr. Griscom told of his "big day" trip on May 16 in the Englewood, N. J., region, in company with Mr. Granger and Dr. Janvrin. They obtained a list of 97 species of birds—among the more notable ones being a female Ruddy Duck (*Erismatura jamaicensis*) and 3 Lesser Yellowlegs (*Totanus flavipes*) in the Overpeck marshes, and an Olivesided Flycatcher (*Nuttallornis borealis*). On May 23, at Jones Beach, L. I., also with Dr. Janvrin, he had observed one Glaucous Gull (*Larus hyperboreus*), one Black-backed Gull (*Larus marinus*), a Least Tern (*Sterna antillarum*) and a Little Black Rail (*Creciscus jamaicensis*). He also reported a female Mourning Warbler (*Oporornis philadelphia*) on May 22, and a Gnatcatcher (*Poliop-tila c. cærulea*) on May 25, in Central Park.

Mr. Rogers reported for Mr. Hix a Kentucky Warbler (*Oporornis formosus*) near Coytesville, N. J., on May 16 and a Lincoln's Sparrow (*Melospiza l. lincolni*) in Central Park on May 19; and for Mr. J. T. Nichols a Lawrence's Warbler (*Vermivora "lawrencei"*) observed at Mastie, L. I., on May 18. Mr. Rogers and Mr. W. DeW. Miller had made their "big day" trip on May 16 in the Plainfield, N. J., region, recording 93 species of birds—among them an adult Bald Eagle (*Haliaeetus l. leucocephalus*), a flock of 15 Rusty Blackbirds (*Euphagus carolinus*) and a Gnatcatcher. Mr. Rogers also spoke of an unusually large return flight of Siskins (*Spinus pinus*) and many White-crowned Sparrows (*Zonotrichia l. leucophrys*) observed by him in northern New Jersey the middle of May.

The paper of the evening was by Mr. Charles L. Camp, on "Pteranodon and Other Flying Reptiles." The speaker described the giant flying reptile discovered in the chalk formation of western Kansas. It had a long, sharp-pointed beak which was toothless, and a large, laterally-compressed crest extending backward from the skull. The fourth digit of the forelimb was greatly elongated for the attachment of the wing membrane.

The Pteranodon and other flying reptiles were shown on the screen, and their probable appearance, method of flying and mode of life were described by the speaker. He thought that they must have been strictly pelagic—probably feeding on smaller marine animals many miles from land, and resting on cliffs along the shore.

October 12, 1920.—The President in the chair.

Mr. H. H. Cleaves, of the State Conservation Commission in Albany, showed the Society some moving-pictures of mammals—mostly of the White-tailed Deer (*Odocoileus americanus*), taken in the Adirondack Mountains—and ending with some "close-ups" of Chipmunks (*Tamias striatus*) and a Skunk (*Mephitis putida*).

The program for the evening was a "Record of Summer Observations by Members."

Mr. L. N. Nichols reported seeing 2 Black Terns (*Hydrochelidon nigra surinamensis*) on the Hudson River, near Christopher Street, July 12.

Mr. J. T. Nichols spoke of the early return flight of shore-birds at Mastic, L. I., during the past summer. On June 27 he had seen one Lesser Yellowlegs (*Totanus flavipes*) and one Least Sandpiper (*Pisobia minutilla*), on July 4 eleven Lesser Yellowlegs, and a Wilson's Snipe (*Gallinago delicata*) on July 17. A Wilson's Phalarope (*Steganopus tricolor*), taken on August 23, was sent to him by Mr. Wm. S. Dana for identification. On August 14 he and Mr. C. H. Rogers had had the good fortune of seeing a Marbled Godwit (*Limosa fedoa*) alight among their decoys.

Dr. Janvrin recorded an immature Black-backed Gull (*Larus marinus*) seen by Messrs. Granger, Rogers and himself at Long Beach, L. I., on May 30—probably a summering bird—and on the same day a flock of about 60 Knots (*Tringa canutus*) associating with about 200 Ruddy Turnstones (*Arenaria interpres morinella*) and 20 Black-bellied Plovers (*Squatarola squatarola*). With Mr. Rogers, he had found three immature Florida Gallinules (*Gallinula galeata*) in the marshes near Kingsland, N. J., on July 29. With Mr. Griscom, on August 11, he had observed a Cory's Shearwater (*Puffinus borealis*) just off Port Saunders, on the west coast of Newfoundland (the northernmost record for the species).

October 26, 1920.—The President in the chair.

Drs. Myron P. Denton and Ralph W. Tower, whose names had been proposed at the preceding meeting, were elected to Resident Membership in the Society.

Mr. Weber reported a Yellow Rail (*Coturnicops noveboracensis*) taken in the Overpeck marshes near Leonia, N. J., on October 11.

Between June 1 and 8, at Santa Cruz in the Catskill Mountains, at an altitude of about 2,000 feet, Mr. Chubb had found a male Cerulean Warbler (*Dendroica cerulea*)—possibly the same one that he had seen the previous summer in the same locality. He had not seen the female bird, but supposed that a pair were breeding there.

Mr. Walsh reported seeing Snow Buntings (*Plectrophenax n. nivalis*) at Long Beach, L. I., on October 24.

The program for the evening was a talk by Mr. John T. Nichols, entitled "Shore Bird Migration Notes." Mr. Nichols first described the chief physical characteristics of the south shore of Long Island and enumerated the different types of feeding-grounds—such as the ocean beach, sand-spits and bars, mud flats, the shores of tidal creeks, salt meadows, etc.—and spoke of the species of shore-birds characteristic of each. He then took up the subject of the migrations of these birds—especially the autumn migration—and said that in his experience the main migration route was from east to west over the marshes and meadows back of the ocean beach. There was also a subsidiary line of migration along the north shore of the island, especially favored by the Hudsonian Curlew (*Numenius hudsonicus*). He thought that most of the birds coming from the north reached the island near its eastern end, followed the south shore westward for a variable distance and then struck out in a southerly or southwesterly direction over the ocean. The speaker closed his talk with an estimate of the total numbers of the different species reaching Long Island during the last six months of the year.

November 9, 1920.—The meeting was omitted on account of conflicting with the Annual Meeting of the American Ornithologists' Union.

November 23, 1920.—The President in the chair.

Mr. J. T. Nichols reported for Mr. R. C. Murphy a flock of about 200 Red Crossbills (*Loxia curvirostra minor*) seen in Brooklyn on the day of the meeting, and for Mr. Laidlaw Williams 2 Ospreys (*Pandion haliaetus carolinensis*) seen at Mastic, L. I., on November 11, and a Yellow-breasted Chat (*Icteria v. virens*) on October 31, also at Mastic.

Mr. Weber reported an unusually large flight of Brant (*Branta bernicla glaucogastra*) at Barnegat, N. J., on November 2 and 3. With the Brant were a smaller number of Canada Geese (*Branta c. canadensis*).

Mr. Griscom and others spoke of the comparative scarcity of Purple Finches (*Carpodacus p. purpureus*) and Black-capped

Chickadees (*Penthestes a. atricapillus*) in the New York City region this autumn.

The program of the evening was a talk by Mr. T. Gilbert Pearson, entitled "Notes on Some of the Gulf Coast Bird Colonies." The speaker first described the different types of country found along the gulf coast in Florida, Mississippi, Louisiana and Texas, and then told of the colonies of water-birds he had found on a number of trips to this region. His most recent trip had been made in May of this year, when he had investigated colonies in Mississippi, Louisiana and Texas. His most interesting findings were a colony of Reddish Egrets (*Dichromanassa rufescens*) on some islands between Mesquite and San Antonio Bays, Texas, and a small colony of White Pelicans (*Pelecanus erythrorhynchos*) on Little Bird Island, about thirty miles south of Corpus Christi, Texas. He had also found a very large colony of Herons and Egrets—among which the Reddish Egret was the most common species—on an island in the Laguna de la Madre, about thirty miles from Point Isabel, Texas.

The talk was illustrated with a large number of lantern-slides showing the different types of country explored and the colonies of breeding birds.

December 14, 1920.—The President in the chair.

Mr. Pearson called the attention of the Society to the fact that certain moneyed interests were trying to use the water of the Yellowstone National Park for irrigation purposes, and that a bill proposing to use about 8000 acres of the Park for a reservoir had passed the U. S. Senate. He suggested that the Linnæan Society should put itself on record as being strongly opposed to the use of any of the National Parks by commercial interests, and that the Secretary should notify the N. Y. State senators to that effect. Such a resolution was thereupon adopted by vote of the Society.

Mr. Griseom said he had been to Long Beach, L. I., on November 25, with Mr. Crosby and Dr. Janvrin, where they had seen a Catbird (*Dumetella carolinensis*), a Yellow Palm Warbler (*Dendroica palmarum hypochrysea*), a Kittiwake Gull

(*Rissa t. tridactyla*) and a male Bufflehead Duck (*Charitonetta albeola*).

Mr. L. N. Nichols reported a Red-breasted Nuthatch (*Sitta canadensis*) at Forest Park, Queens, on December 2.

Dr. Janvrin had been to Long Beach, L. I., on December 12, with Mr. Laidlaw Williams, where they found an American Bittern (*Botaurus lentiginosus*), a Sharp-tailed Sparrow (*Passerherbulus caudacutus*) and about 12 Seaside Sparrows (*P. m. maritimus*).

The paper of the evening was by Dr. Jonathan Dwight, entitled "The Metallic Colors of the Grackles, especially the Purple Grackle (*Quiscalus quiscula*).'" After a preliminary discussion of the general principles of the physics of light and the perception of colors, the speaker proceeded to explain how the metallic colors of the grackles were produced by "interference." He showed by means of specimens that the feathers on the heads and backs of these birds ended in tips of a certain color—violet, blue, green or yellowish—with bands of the other colors higher on the shafts. The color of the tips gave the general color effect for the area covered.

Taking up the three subspecies of *Quiscalus quiscula*, Dr. Dwight said that *aglæus* usually had violet heads, *quiscula* blue and *æneus* green. The coloring of the backs was bronzed in *æneus*, green in *aglæus* and purplish in *quiscula*. Specimens of the three races were exhibited.

December 28, 1920.—The President in the chair.

Mr. O. P. Medsger then gave the paper on the program—"Some Experiences with Snakes and Turtles." Illustrating his remarks with lantern-slides, the speaker told in an informal way about the habits of a number of the more common snakes and turtles of the eastern United States as he had observed them in the field—among them being the Blacksnake (*Coluber constrictor*), Rattlesnake (*Crotalus horridus*), Copperhead (*Agkistrodon mokasen*), Water Snake (*Natrix s. sipedon* var. *sipedon*), Box Turtle (*Terrapene carolina*) and Snapping Turtle (*Chelydra serpentina*). He spoke of the very marked local distribution of the Copperhead, and gave some

figures that seemed to show that the bite of the common eastern Rattlesnake (*C. horridus*) was not as fatal as is usually supposed.

January 11, 1921.—The President in the chair.

Mr. Griscom had been to Montauk and Montauk Point, L. I., with Mr. Crosby and Dr. Janvrin, on January 1 and 2. On the 1st they observed 2 Black Guillemots (*Cephus grylle*) (the second record for Long Island), 2 Dovekies (*Alle alle*), a female King Eider (*Somateria spectabilis*), a pair of Ruddy Ducks (*Erismatura jamaicensis*), one Arkansas Kingbird (*Tyrannus verticalis*) (the second record for Long Island), a flock of a dozen Tree Swallows (*Iridoprocne bicolor*), 2 Catbirds (*Dumetella carolinensis*) and a Brown Thrasher (*Toxostoma rufum*). Mr. Griscom also reported for Mr. Crosby a Coot (*Fulica americana*) seen near Hastings on the Hudson River on January 7.

Mr. Weber reported an American Bittern (*Botaurus lentiginosus*) at Rosedale, L. I., on January 9.

Mr. Chubb had seen a Ruby-crowned Kinglet (*Regulus c. calendula*) in the vicinity of Van Cortlandt Park on January 11.

The general scarcity of birds was commented on by members.

Mr. S. H. Chubb then gave a talk on "Wild Life and Scenery of the Catskill Mountains," illustrated by lantern-slides.

The speaker described the country in the eastern part of the Catskills, where he had spent most of his time—principally in the vicinity of Haines Falls, at an altitude of about 2,000 feet. He had listed 71 species of birds in this area, including 14 Warblers. Of the latter, the most interesting was the Cerulean (*Dendroica cerulea*), a male of which species he had observed during two successive seasons. Among the Canadian Zone birds found nesting were the Winter Wren (*Nannus h. hiemalis*), Brown Creeper (*Certhia familiaris americana*), Red-breasted Nuthatch (*Sitta canadensis*), Bicknell's and Hermit Thrushes (*Hylocichla aliciae bicknelli* and *H. guttata pallasi*).

The lantern-slides showed views of the country described, of a number of the breeding birds and their nests, and of some of the mammals and characteristic plants of the region.

January 25, 1921.—The President in the chair.

Mr. Alvah C. Bessie and Mr. Frank E. Barnes, whose names had been proposed at the preceding meeting, were elected Resident Members of the Society.

Mr. Charles Johnston said that he and Mr. E. P. Bicknell had seen 10 Tree Swallows (*Iridoprocne bicolor*) at Long Beach, L. I., on January 1.

Mr. Griscom reported for Mr. Crosby one Rusty Blackbird (*Euphagus carolinus*) and 5 Wilson's Snipe (*Gallinago delicata*) seen at Rhinebeck, N. Y., on January 15, and one Red-winged Blackbird (*Agelaius p. phæniceus*) and 25 Grackles (*Quiscalus quiscula* subsp.) in the same locality on January 22.

The paper of the evening was presented by Mr. James P. Chapin, entitled "Problems in African Ornithology." The speaker had had field experience covering six years in Africa, mostly in the Congo region, and told first of some of the difficulties encountered in collecting and observing birds there, and of some of the species characteristic of the forest and others found in the savannah country.

Taking up the subject of the Weaver-birds, Mr. Chapin said they could be divided into two groups: 1st, the *Estrildinæ*, including the Waxbills, Java Sparrow and Widow-birds allied to *Vidua*, and in which there were mouth-spots in the young birds; and 2d, the *Plocinæ* or true Weavers (*Hyphantornis*, etc.), Bishop-birds and Whydahs like *Diatropura* and *Coliuspasser*, in which the young had no mouth-spots. The speaker thought that the Cuckoos (*Cuculidæ*) could also be divided similarly into two groups: the parasitic species, in which the young had no mouth-spots and no down; and those usually non-parasitic, in which the young had characteristic spots on the tongue or palate and a peculiar hair-like down.

Mr. Chapin's paper was illustrated with many lantern-slides.

Mr. de Lagerberg, a former member of the Society, exhibited one of his medals of Linnæus, together with halftones of others.

Mr. Franklin Benner, of Minneapolis, one of the founders of the Linnæan Society, then told of the first meeting, at which the Society was organized and named, and gave a list of the original members.

February 8, 1921.—The President in the chair.

Mr. Charles Johnston and Mr. Ralph Friedman were elected Resident Members of the Society.

Mr. Weber reported a Black-crowned Night Heron (*Nycticorax nycticorax nævius*) at Rosedale, L. I., on January 27.

The Secretary read a letter, written to Mr. J. T. Nichols by Mr. H. K. Munsie, telling of a "large white owl" he had seen on November 28, 1920, while driving along Jersusalem Avenue, near Hempstead, L. I.

Mr. W. DeWitt Miller then gave a talk on "Possibilities in Local Field Ornithology." He said that after the local list, with migration dates for males, females and young, had been compiled, the most important thing for the ornithologist to do was to pay particular attention to the *common* birds of his locality and to try to learn as much as possible about their habits and life histories. There were a number of interesting and important subjects to be studied,—such as nest-building, the length of the incubation period, and especially the young birds; feeding habits and the distribution of species dependent upon feeding habits (such as the Myrtle Warbler (*Dendroica coronata*), Fox Sparrow (*Passerella i. iliaca*) and Carolina Wren (*Thryothous l. ludovicianus*)); the study of songs and call-notes and their interpretation; and the study of bathing and drinking habits. The subject of bird courtship was another interesting one; and very little was known about the roosting habits of most species. Mr. Miller thought that the moult could be studied best by the collector or museum-worker, and that bird-banding presented a great opportunity for valuable work to those who lived much of the time in the country.

In discussing Mr. Miller's paper, Mr. Griscom spoke of the lack of information concerning the different dates of arrival of male and female migrating Warblers.

Mr. Chapin thought that field ornithologists should coöperate with laboratory-workers in zoölogy and embryology, and spoke of the importance of studying the young birds.

February 24, 1921.—The President in the chair.

Mr. Laidlaw O. Williams, whose name had been proposed at the preceding meeting, was elected a Resident Member.

Mr. Granger reported a recent northward flight of Fox Sparrows (*Passerella i. iliaca*), and Mr. Williams had also seen a number of the same species in Central Park.

Mr. Friedman reported a Flicker (*Colaptes a. auratus*) seen recently by Dr. A. A. Allen at Ithaca, N. Y.

The paper of the evening was by Mr. Chauncey J. Hawkins, entitled "Philosophical Ornithology." In the absence of the author, the paper was read by Dr. Dwight. As its title indicated, it was essentially a plea for a more philosophical presentation of ornithological facts and problems by students of the science. The author believed that the work of systematic ornithologists in separating species into numerous subspecies, defining their ranges exactly, making constant changes in the nomenclature, etc., was not as important as explaining the relationships of birds to the rest of the Universe.

In the discussion that followed, it was the opinion of the members that Mr. Hawkins's paper was one of destructive, rather than constructive, criticism.

March 8, 1921.—Annual Meeting. The President in the chair. Twenty-eight members (Mrs. Reichenberger, Drs. Denton, Dwight, Fisher, Janvrin and Murphy, and Messrs. Barnes, Bessie, Bowdish, Chapin, Chubb, Crosby, Friedman, Gladden, Granger, Griscom, Helme, Hix, F. E. Johnson, Johnston, Kieran, Lang, Marks, L. N. Nichols, Noble, Pearson, Rogers, and Williams) and seventeen visitors present. The meeting was preceded by the Ninth Annual Dinner in the Mitla Room of the Museum, attended by twenty-five members and nine guests.

Owing to the absence of the Treasurer, his report was not read.

The Secretary read his Annual Report, as follows:

During the past year the Linnæan Society has held fifteen meetings—the first November one was omitted owing to conflict with the annual meeting of the American Ornithologists' Union—with a total attendance of 382. The Eighth Annual Dinner was attended by 38 members and guests, and 23 members were present at the Annual Meeting the same evening. At the remaining 14 meetings the total attendance averaged 25, that of members 14—that is, the attendance of members was greater than that of the preceding year, but there were fewer visitors. The largest number present at any one meeting was 52 (December 28), of members 17; the smallest was 12.

The Society has lost by death during the past year one Honorary Member (Mr. William Dutcher) and two Resident Members (Messrs. Robert L. Maitland and John L. Childs), and eight new Resident Members have been elected. The membership list now stands: Resident, 87; Corresponding, 26; Honorary 3: total, 116.

Thirteen papers have been presented before the Society—six of them on ornithological subjects, three on the natural history of expeditions, two on entomology, one on herpetology and one on extinct flying reptiles. Two evenings were devoted to a discussion of the proposed Local Avifauna List and the new publication policy of the Society, and one to records of summer observations.

The Society has issued its *Abstract of Proceedings*, No. 32, pages 39, containing the minutes of the year ending March 9, 1920, and "A Revision of the Seaside Sparrows," 13 pages, by Ludlow Griscom and J. T. Nichols.

The Society decided to continue its publications under the title of *Proceedings of the Linnæan Society of New York* and to issue an abstract of its proceedings separately at the end of each year. Pages 1-7 of Vol. 33 have already been issued, containing three papers on exotic herpetology by Karl P. Schmidt.

E. R. P. JANVRIN,
Secretary.

Mr. T. Gilbert Pearson then presented the paper of the evening, speaking on "The Fight for the National Parks." He told first of some of the recent attempts by commercial interests to make use of a part of the Yellowstone Park as a reservoir for irrigation purposes, and of certain Congressional bills in support of these interests. These bills had so far been defeated by active work and propaganda instituted by the National Association of Audubon Societies.

Mr. Pearson then showed a number of lantern-slides of the Rocky Mountain, Glacier and Yellowstone National Parks,

describing the scenery and wild life and telling of personal experiences he had had on trips through these regions.

March 22, 1921.—Regular Meeting. The President in the chair.

Dr. Jonathan Dwight was elected an Honorary Member of the Society by acclamation, and Messrs. Charles A. Urner, T. Donald Carter and Wilmer C. Van Duyne, whose names had been proposed at the preceding meeting, were elected to resident membership in the Society.

The President appointed the following committees:

Membership: Dr. Dwight, Mr. Chubb, Mr. L. N. Nichols.

Finances: Mr. Pearson, Dr. Dwight, Dr. Murphy.

Papers and Lectures: Dr. Janvrin, Dr. Murphy, Dr. G. C. Fisher.

Publications: Mr. Griscom, Mr. J. T. Nichols, Dr. Janvrin.

Local Avifauna: Mr. J. T. Nichols, Mr. Griscom, Dr. Janvrin.

Mr. Griscom reported the following field observations: On the 22d of Feb., at Montauk Point, L. I., with Mr. Crosby, 1 Black Guillemot (*Cepphus grylle*), 2 Glaucous Gulls (*Larus hyperboreus*), a pair of Harlequin Ducks (*Histrionicus histrionicus*), 1 Ruddy Duck (*Erismatura jamaicensis*) and 1 Coot (*Fulica americana*). On Feb. 27, an early migration of ducks on the Overpeck Creek, including a pair of Baldpates (*Mareca americana*), 16 Pintails (*Dafila acuta*), and 8 Lesser Scaups (*Marila affinis*). On March 6, with Mr. Granger, a pair of Hooded Mergansers (*Lophodytes cucullatus*), on the Overpeck, with 70 Pintails (*Dafila acuta*). On March 13, with Dr. Janvrin, 200 Pintails (*Dafila acuta*) and 5 Mallards (*Anas platyrhynchos*) in the same locality; also a male Cowbird (*Molothrus a. ater*), the earliest local date for the species. On March 20, also on the Overpeck Marshes, 1 male Baldpate and 1 male Bufflehead (*Charitonetta albeola*) (1st spring record), one male and two female Green-winged Teal (*Nettion carolinense*) (3d record in 20 years), and 6 Pipits (*Anthus rubescens*) (earliest spring date). For Mr. W. DeW. Miller he reported an early Chipping Sparrow (*Spizella p. passerina*) at Plainfield, N. J., on March 20.

Mr. Friedman reported a Carolina Wren (*Thryothorus l. ludovicianus*) in Prospect Park, Brooklyn, on March 14.

The paper of the evening was by Dr. Robert C. Murphy, entitled "Notes on South American Boobies (*Sulidæ*)," and illustrated by lantern-slides and specimens.

The speaker first took up the differences between the Boobies and the Gannets—such as the feathering of the face and throat, the number rectrices, the reticulation of the feet and the relative sizes of the sexes. The Boobies, he said, were found in tropical and subtropical seas, which were usually calm; the Gannets, on the other hand, frequented colder and more stormy seas. Some Boobies, such as *Sula variegata* and *Sula nabouxii*, were littoral species, breeding along the coasts of South and Central America, and never being found far from the mainland, others, such as *Sula piscator*, *S. cyanops* and *S. leucogaster*, were almost worldwide in distribution in tropical seas and bred on oceanic islands.

Dr. Murphy spoke of the Island of Trinidad off the coast of Brazil, where for some reason, *S. leucogaster* was not found, and where its place had been taken by a subspecies or phase of *S. piscator* that had acquired the dark bib and head of *leucogaster*.

The speaker then described the habits of *S. variegata* and *S. nabouxii*, as he had observed them on the coast of Peru.

April 12, 1921.—Regular Meeting. The President in the chair.

Mr. R. H. Howland, of Upper Montclair, N. J., was elected a Resident Member of the Society.

By request of Mr. Harold E. Anthony, the speaker of the evening, his paper, "A Zoölogical Reconnaissance of Southern Ecuador," was next presented.

Mr. Anthony had just returned from a seven months collecting trip with Mr. George K. Cherrie in the interests of the American Museum of Natural History for birds and mammals. His travels had taken him from sea-level to the "paramo" zone in the Andes above tree-line, and also over the divide into the Amazonian forest. The speaker spoke very interest-

ingly of the faunal life-zones visited, the effect of rainfall upon the forest and the distribution of life, and the characteristics of the native peoples encountered.

Considerable discussion followed.

Reports on field work were next given. Mr. Granger recorded a Towhee (*Pipilo e. erythrophthalmus*) at Red Bank, N. J., on April 10. Mr. Griscom reported as follows from the Englewood region: March 27, with Dr. Janvrin, the Pied-billed Grebe (*Podilymbus podiceps*), Fish Hawk (*Pandion haliaëtus carolinensis*), Vesper Sparrow (*Poœcetes gramineus*) and Tree Swallow (*Iridoprocne bicolor*), all being the earliest arrival dates for the region. On April 3, also with Dr. Janvrin, eight species of ducks on Overpeck Creek, including 7 Green-winged Teal (*Nettion carolinense*) and a Drake Shoveller (*Spatula clypeata*). Also a Horned Grebe (*Colymbus auritus*) in Spring plumage, the third local record—and the Yellow Palm Warbler (*Dendroica palmarum hypochrysea*)—earliest date.

April 26, 1921.—The President in the chair.

In the absence of the Secretary, the chair appointed Mr. Griscom Secretary pro tem.

The Treasurer's report for the past year had been received by the chair, and an abstract of it was read by the Secretary pro tem. The chair appointed Messrs. Chapin and Griscom as an Auditing Committee.

As there was no further business, the Society proceeded to the announced program of the evening, which was the discussion of the Spring migration. Every member present gave the results of his recent observations and the dates on which he had first noted the arrival of various species. It was the consensus of opinion that up to date the migration was early, but by no means as much so as the vegetation.

The more noteworthy records were as follows:

Mr. L. N. Nichols had noted the Fish Crow (*Corvus ossifragus*) March 14th at Clason Point. Mr. Granger reported as follows for Central Park: April 3d, Pine Warbler (*Dendroica vigorsi*); April 14th, Solitary Vireo (*Lanivireo s. soli-*

tarius) (earliest date); April 21st, Black-throated Green Warbler (*Dendroica virens*) (earliest date); April 25th, Black-throated Blue Warbler (*Dendroica caerulescens*) (earliest date); April 26th, Ovenbird (*Seiurus aurocapillus*). At Princeton, with Mr. Charles H. Rogers, on April 17th, he had seen a House Wren (*Troglodytes a. aëdon*), and Mr. Rogers had seen a Northern Yellow-throat (*Geothlypis t. trichas*) on April 10th. On April 24th in Westchester County, 2 miles northeast of Irvington, he had found a dead Opossum (*Didelphis virginiana*)—a rare mammal east of the Hudson.

Mr. Charles Johnston recorded a Towhee (*Pipilo e. erythrophthalmus*) and two Savannah Sparrows (*Passerculus sandwichensis savanna*) on April 16th in Washington Square, and on the 17th in the same square, a Hermit Thrush (*Hylocichla guttata pallasii*) and three Chipping Sparrows (*Spizella p. passerina*). Mr. William T. Davis reported a Turkey Vulture (*Cathartes aura septentrionalis*) and 5 Canada Geese (*Branta c. canadensis*) on Staten Island, April 26th. Mr. Crosby reported as follows for Rhinebeck, Dutchess County, N. Y.: April 10th, with Mr. Griscom, Virginia Rail (*Rallus virginianus*) (earliest date), and a Long-eared Owl's (*Asio wilsonianus*) nest with 5 eggs; April 14th, Hermit Thrush and Louisiana Water-thrush (*Seiurus motacilla*); April 16th, American Bittern (*Botaurus lentiginosus*) and Black-crowned Night Heron (*Nycticorax nycticorax naevius*); April 17th, Loon (*Gavia immer*) and Great Blue Heron (*Ardea h. herodias*); April 21st, a wave, Little Green Heron (*Butorides v. virescens*), Florida Gallinule (*Gallinula galeata*), Brown Thrasher (*Toxostoma rufum*) and House Wren (*Troglodytes ä aëdon*); April 24th, Chimney Swift (*Chaetura pelagica*), Barn Swallow (*Hirundo erythrogastra*) and Black-and-white Warbler (*Mniotilta varia*). Mr. Griscom had spent April 17th with Mr. J. M. Johnson in the Englewood region. A total of 50 species was noted, including a Loon (*Gavia immer*), the Virginia Rail and the Greater Yellow-legs (*Totanus melano-leucus*)—the last two being the earliest local spring dates.

The Chair then called upon Mr. S. Prentiss Baldwin, the bird-banding expert, for some remarks, and Mr. Baldwin spoke

entertainingly of his results in trapping birds at Thomasville, Georgia, during the past winter, which made his fifth season of intensive work at that station.

May 10, 1921.—The President in the chair.

Mr. Griscom reported for the Auditing Committee that the Treasurer's report had been examined and found correct, as stated.

The Secretary was appointed Chairman of the Committee on Publications, in place of Mr. Griscom who wished to devote more of his time to the work of the Local Avifauna Committee.

The Secretary stated that he had received about 50 publications mostly in pamphlet form, from the British Museum, which would be turned over to the Librarian of the American Museum.

The paper of the evening was then presented by Dr. G. Clyde Fisher, entitled "With John Burroughs in his Favorite Haunts." The speaker told of several visits he had made to the home of the famous naturalist and showed many lantern-slides of Mr. Burroughs and the house "Riverby," on the west bank of the Hudson, where he had spent so many years and had written most of his books. Pictures were also shown of "Slab-sides," a small cottage that the naturalist had built in a secluded spot in the woods, and where he sometimes lived for days at a time, reading and writing and observing the wild life about him. Dr. Fisher also told of Mr. Burroughs' boyhood home in the Catskills, and showed pictures of the old farm and "Woodchuck Lodge," the cottage where he lived when revisiting the scenes of his early life.

May 24, 1921.—As both the President and Vice-President were absent, the Secretary called upon Mr. Chapin to occupy the chair:

The following, whose names had been proposed at the last meeting, were elected to Resident Membership: Miss Blanche Samek of 511 West 113th Street, Miss Gertrude Litchfield, Mrs. Alice F. Mapes and Miss Mary K. Ruby, all of 56 West 75th Street, New York.

The program of the evening was the reporting of field observations by members.

Mr. Chapin told of his experiences in Madison Square Park on May 14th, when numbers of migrating birds, that had been bewildered in the fog and rain of that morning, were to be seen on the grass and in the bushes of the Park. There were many species of Warblers—among them the Ovenbird (*Seiurus aurocapillus*) was the most numerous. He also saw a Lincoln's Sparrow (*Melospiza l. lincolni*) and 8 Grasshopper Sparrows (*Ammodramus savannarum australis*). He estimated that over 100 birds had been killed by striking the light of the Metropolitan Building.

Mr. Urner had found 8 young Short-eared Owls (*Asio flammeus*) on May 14th in the marshes near Elizabeth, N. J. Four of them were much larger than the others, and as there were apparently three adult birds in the immediate vicinity, the question arose as to whether the 8 young might not be two broods united. He also reported a King Rail in the same locality on May 21st.

Mr. Johnston reported for Central Park a Golden-winged Warbler (*Vermivora chrysoptera*) on May 14th, a Connecticut Warbler (*Oporornis agilis*), Bobolink (*Dolichonyx oryzivorus*) and Lincoln Sparrow on the 15th, and a Kentucky Warbler (*Oporornis formosus*) on the 16th.

Mr. Chapin then spoke of some recent work he had been doing on the anatomy of the throat of the male American Bittern (*Botaurus lentiginosus*). He thought that the Bittern in making his characteristic "booming" or "pumping" sound probably extends the oesophagus by forcing air into it from the air-sacs; much as the Pectoral Sandpiper does during its breeding season. He had found fleshy pads at the sides of the lower jaw, which might help to hold the air in the distended throat, and also a muscle running from the glottis to the skin of the neck.

Mr. Chapin spoke of the importance of making careful field observations on "booming" Bitterns, to see whether they kept their bills open or closed during the performance.

October 11, 1921.—The Vice-President in the chair.

The Secretary read a letter from Mrs. Elizabeth G. Britton, asking whether it would be possible for the Linnæan Society to have an occasional joint meeting with the Torrey Botanical Club at times when the program of one of the Societies happened to be on a subject that would also be of interest to the members of the other. A motion was thereupon passed, appointing Mr. Griscom a Committee of one to confer with the Secretaries of the two Societies, with the object of arranging for such joint meetings from time to time.

Mr. and Mrs. George D. Briggs, whose names had been proposed at the meeting on May 24th, were elected Resident Members of the Society.

The Secretary called the attention of the Society to the fact that, if the "Abstract of Proceedings" for the year ending March 8, 1921, should be published at the present time, the cost of publication at present high rates would probably leave very little in the Society's treasury. After discussion by members, it was voted to omit publishing the "Abstract" at the present time and to combine it with the "Abstract of Proceedings" for the year 1921-1922.

At the suggestion of the Treasurer and on motion by Mr. Griscom, the Society passed the following resolution:

WHEREAS: It had been found inexpedient and inconvenient to have both President and Treasurer sign checks of the Linnæan Society, and
WHEREAS: This ruling has operated to delay the speedy transaction of the Society's business; therefore

Be it Resolved: That this ruling be abolished, and that the Treasurer (Mr. T. Gilbert Pearson) alone be authorized to sign the Society's checks, and

Be it further Resolved: That a copy of this minute be sent to the United States Mortgage and Trust Company, and another copy to the Treasurer of the Society.

The program of the evening was the recording of summer observations by members.

Mr. Griscom stated that the August migration in the New York City region had been the earliest on record. From September 18th on, however, continued warm weather turned the migration into a late one, although a few early birds still arrived. Among his "earliest records" were the following:

In Central Park, Myrtle Warbler (*Dendroica coronata*), Nashville Warbler (*Vermivora r. rubricapilla*) and Cape May Warbler (*Dendroica tigrina*) on August 27th; White-breasted Nuthatch (*Sitta c. carolinensis*), Sept. 14th; Purple Finch (*Carpodacus p. purpureus*), Sept. 15th; Chickadee (*Parus a. atricapillus*), Sept. 24th; at Riverside, N. Y., Brown Creeper (*Certhia familiaris americana*), Sept. 13th; Junco (*Junco h. hyemalis*), Sept. 14th; at Englewood, N. J., American Bittern (*Botaurus lentiginosus*), Coot (*Fulica americana*), Pipit (*Anthus rubescens*) and Hermit Thrush (*Hylocichla guttata pallasa*), Sept. 25th. (A Myrtle Warbler was observed by Mr. W. DeW. Miller at Plainfield, N. J., August 13th.) Among Mr. Griscom's "latest records" were: Hummingbird (*Archilochus colubris*), at Riverdale, Sept. 22d; in Central Park, Bay-breasted Warbler (*Dendroica castanea*), Sept. 26th; Yellow Warbler (*Dendroica æ. æstiva*), Yellow-breasted Chat (*Icteria v. virens*), Prairie Warbler (*Dendroica discolor*) and Wood Thrush (*Hylocichla mustelina*, Oct. 5; at Englewood, Northern Water-thrush (*Seiurus n. noveboracensis*) and Grey-cheeked Thrush (*Hylocichla a. alicia*), Oct. 9. He also reported the following interesting occurrences: In Central Park, a Bobolink (*Dolichonyx oryzivorus*) and Mockingbird (*Mimus p. polyglottos*) on Aug. 27th; a Philadelphia Vireo (*Vireosylva philadelphia*), Sept. 15th and 16th; an Indigo Bunting (*Passerina cyanea*), Oct. 5th; in the Englewood region, a Laughing Gull (*Larus atricilla*), Sept. 25, and a Redhead Duck (*Marila americana*), Oct. 9; finally, a Black Tern (*Hydrochelidon niger surinamensis*), observed by Mr. J. M. Johnson and himself at Jones Beach, L. I., May 29 (the only spring record for Long Island), and a bird of the same species at Swartswood Lake, Sussex County, N. J., Aug. 14 (the only inland record for the New York region).

Mr. L. N. Nichols reported finding about 20 breeding pairs of Piping Plover (*Ægialitis meloda*) at Long Beach, L. I., May 26, and he and Mr. E. P. Bicknell saw a Glaucous Gull (*Larus hyperboreus*) on the same day. In the Baychester Marshes, East Bronx, he had seen a Migrant Shrike (*Lanius ludovi-*

cianus migrans), Aug. 15. For his son, Edward G. Nichols, he reported a Canada Warbler (*Wilsonia canadensis*) on board ship 800 miles east of New York on Aug. 20.

Dr. Janvrin reported a Willet (*Catoptrophorus s. semipalmatus*) at Long Beach, L. I., on June 5, a Migrant Shrike (*Lanius ludovicianus migrans*) near Englewood, N. J., Aug. 9, and a Brown Creeper (*Certhia familiaris americana*) at Darien, Conn., Sept. 14.

Mr. Friedman, at Long Beach L. I., had seen two Least Terns (*Sterna antillarum*) on Aug. 14 and a Northern Phalarope (*Lobipes lobatus*) on Sept. 11; and in the Englewood Region, an Osprey (*Pandion haliaëtus carolinensis*) on Oct. 9.

Mr. Pearson reported seeing 14 Canada Geese (*Branta c. canadensis*) flying over the Oklawaha River in Florida on May 22, and finding Herring Gulls (*Larus argentatus*) breeding on Muskeget Island in August.

Mr. Johnston reported two Henslow's Sparrows (*Passerherbulus h. henslowi*) at Bridgehampton, L. I., Sept. 11, and two Least Bitters (*Ixobrychus exilis*) at Shinnecock, L. I., Sept. 12.

October 25, 1921.—Regular Meeting.—The Vice-President in the chair.

The minutes of the preceding meeting were read and approved as corrected.

Mr. Cyril McDermott, whose name had been proposed at the last meeting, was elected to Resident Membership in the Society.

It was voted to omit the first November meeting, on account of its conflicting with the annual meeting of the American Ornithologist's Union.

Mr. Charles Johnston had been to Long Beach, L. I., on Oct. 12, with Mr. Griscom and Mr. J. M. Johnson, where they saw one American Widgeon (*Mareca americana*), 1 Green-winged Teal (*Nettion carolinense*), and 2 Sora Rails (*Porsana carolina*).

Mr. Hix reported finding the Ruffed Grouse (*Bonasa u. umbellus*) common on the Harriman Interstate Park in

August, and Herring Gulls (*Larus argentatus*) and Common Terns (*Sterna hirundo*) common on the Hudson River, Aug. 16.

Mr. Griscom reported a late Tennessee Warbler (*Vermivora peregrina*) at Riverdale, N. Y., Oct. 17.

Mr. L. N. Nichols had seen 8 Laughing Gulls (*Larus atricilla*) in Eastchester Bay, Oct. 17, and Mr. Urner had observed the same species in the Newark Marshes, Oct. 23.

Mr. Chubb reported finding Red-breasted Nuthatches (*Sitta canadensis*) abundant on Matinicus Rock, Me., Sept. 9, climbing around on the racks and on the lighthouse—there being not a single tree on the rock. He also found one nestling Leache's Petrel (*Oceanodroma leucorhoa*).

Mr. Ludlow Griscom then presented the paper of the evening, entitled "Notes on the Fauna and Flora of New Foundland." He had made two trips to the Island—one in August, 1920, and again in July, 1921. The first had been in the nature of an exploration—he and Dr. Janvrin travelling by rail up the west coast as far as Humber Sound and Bay of Islands, and then by steamer up the rest of the west coast and crossing the Strait of Belle Isle to the Labrador shore. On his second trip he had worked up more carefully the Bay of Islands regions and then had spent some time in the neighborhood of St. George's Bay.

Mr. Griscom told of the main geological features of the west coast of the island, which was for the most part a hilly or mountainous region—the rock formation being either of granite, diverite, limestone or serpentine. The highest hills were about 2,000 feet above sea level; but the tree line being about 1,400 feet, the tops of many of the mountains were bare. The most varied and abundant flora was associated with the limestone formations, while the "Serpentine barrens" fully merited their name.

Among the interesting birds found breeding on the island were a number of Warblers (Mniotiltidæ)—among them Mourning (*Oporornis philadelphia*) and the Lincoln's Sparrow (*Melospiza l. lincolni*) which was very abundant. During his

second trip, Mr. Griscom had found the Welch's Ptarmigan (*Logopus welchi*), which is endemic on the island. Other birds worth nothing were the Pine Grosbeak (*Pinicola enucleator leucura*) and White-winged Crossbill (*Loxia leucop-tera*), and the Raven (*Corvus corax principalis*).

Along the west coast the Black Guillemot (*Cephus grylle*) and Leache's Petrel (*Oceanodroma leucorhoa*) were fairly common. Puffins (*Fratercula a. arctica*) were not observed on the New Foundland shore, but became very numerous in the cold waters of the Artic Current as the Labrador coast was approached.

Nov. 8, 1921.—Regular Meeting. Omitted on account of conflicting with the annual meeting of the American Ornithologists' Union. (See minutes of last meeting).

November 22, 1921.—Regular Meeting. The Vice-President in the chair.

Under field observations, Mr. Griscom reported seeing three Hooded Mergansers (*Lophodytes cucullatus*) in Central Park on Nov. 17 and 18, and for Mr. Hix, a Purple Sandpiper (*Arquatella m. maritima*) at Long Beach, L. I., on Nov. 20; also for Mr. W. DeW. Miller, a Golden Plover (*Charadrius d. dominicus*) at Plainfield, N. J., on Nov. 6.

Mr. Urner reported Laughing Gulls (*Larus atricilla*) on the Newark Marshes as late as Nov. 6.

Mr. Johnston had been to Long Beach, L. I., on Nov. 8 and 11—both times with Mr. E. P. Bicknell. On the former date they had observed a Parasitic Jaeger (*Stercorarius parasiticus*) and a crippled Ringneck Plover (*Ægialitis semipalmata*); on the latter an Iceland Gull (*Larus leucopterus*) and a Palm Warbler (*Dendroica p. palmarum*) and also more than 50 Gannets (*Sula bassana*).

Mr. Crosby reported the Pine Grosbeak (*Pinicola enucleator leucura*) at Rhinebeck, N. Y., on Nov. 3 (1) and 17 (10) and at Poughkeepsie, Nov. 13, 16, and 20.

The Northern Shrike (*Lanius borealis*) had been seen during Nov. by several members: Mr. Williams reported it from Mastic, L. I., on the 6th, and from Bronx Park on the 19th;

Mr. Crosby, from Rhinebeck, on the 18th; Mr. Nichols, from Garden City, on the 20th, where it sang a song somewhat resembling that of a Catbird (*Dumetella carolinensis*). Mr. Bowdish had seen one at Demarest, N. J., Oct. 28th. On the next day it followed a Fox Sparrow (*Pesserella i. iliaca*) into the trap and killed it, was banded and turned loose. One or two Shrikes were seen around his trap from Nov. 4th to the 21st. He also stated that a party of about 30 members of the A. O. U. had observed 3 or 4 scattered Northern Shrikes at New Lisbon, N. J., on Nov. 12th.

Dr. Janvrin had been to Long Beach, L. I., Oct. 30, with Mr. Johnston and Mr. Williams, where they put up a Woodcock (*Philohela minor*) from the sand dunes back of the beach, and also saw two Black-bellied Plovers (*Squatarola squatarola*), a Mourning Dove (*Zenaidura macroura carolinensis*) and 4 Snow Buntings (*Plectrophenax n. nivalis*).

Mr. Herbert Lang then gave a most interesting talk, entitled "Notes on African Squirrels and the General Distribution of the Sciuridæ and their Economic Importance." He said that the Sciuridæ were rather primitive rodents and that they reached their maximum abundance in high northern latitudes, extending as far as 70 degrees N., and that they were absent from the Australian Zoölogical Region and from the southern part of South America, and some parts of Africa.

Taking up the African species, Mr. Lang showed a number of lantern-slides illustrating different faunal regions from the east to the west coast of the continent and spoke of the squirrels to be found in each region. He then described some of the different anatomical characteristics of the different genera—especially the differences in the feet and toes between the arboreal and terrestrial groups and the peculiarities of dentition and of the skull bones in genera of different habits. He showed how the incisor teeth were approximated in the act of gnawing and how the gnawing apparatus was thrown out of gear when the food was being masticated by the cheek teeth.

Following his talk, Mr. Lang exhibited skins of a number of African species of squirrels.

Dec. 13, 1921.—Regular Meeting. The Vice-President in the chair.

The minutes of the preceding meeting were read and approved. The secretary read excerpts from a circular published by the Wild Flower Preservation Society of America, asking for help in protecting the native plants, some of which are becoming very rare. He also read a letter from a Mr. L. D. Ingalls of Brandon, Vt., recording the recent capture of a young male opossum (*Didelphis v. virginiana*) in a fox-trap in Goshen, Vt.

Mr. J. M. Johnson said that he and Mr. Griscom in the Englewood, N. J., region on Dec. 11 had observed a late Sapsucker (*Sphyrapicus v. varius*) and 4 Savannah Sparrows (*Passerculus sandwichensis savanna*).

Mr. L. N. Nichols recorded a Winter Wren (*Nannus h. hiemalis*) in Bronx Park on Nov. 14, and a White-winged Gull (possibly a Glaucous (*Larus hyperboreus*)) on Pelham Bay, Dec. 7.

Mr. J. T. Nichols reported seeing a Pine Grosbeak (*Pinicola enucleator leucura*) at Garden City, Long Island, Dec. 3, and a Saw-whet Owl (*Cryptoglaux a. acadica*) in New York City, Dec. 9, and also stated that Mr. L. V. Morris had shot several Wilson's Snipe (*Gallinago delicata*) at Shinnecock, L. I., Dec. 3.

A Wilson's Snipe had also been seen on the Overpeck Creek on Dec. 5, by Mr. Williams.

The Pine Grosbeak had also been seen by Mr. F. M. Brown, who had observed 8 in Van Cortlandt Park, Dec. 5, and who also recorded a male Northern Pileated Woodpecker (*Phlæotomus pileatus abieticola*) at Tuxedo, N. Y., Nov. 28.

Mr. Urner reported a Lapland Longspur (*Calcarius l. lapponicus*) on the salt meadows near Elizabeth, N. J., Nov. 27 and on Dec. 11, near Elizabeth, had observed 5 species of owls—1 Barn (*Aluco pratincola*), 1 Saw-whet (*Cryptoglaux a. acadica*), 1 Long-eared (*Asio wilsonianus*), 3 Short-eared (*Asio flammeus*) and 1 Screech (*Otus a. asio*).

The Northern Shrike (*Lanius borealis*) had been seen by

several members in different parts of the New York City region.

Mr. G. Kingsley Noble then spoke on "Problems in the Study of Our Local Reptiles and Amphibians," emphasizing the fact that the complete life histories of a number of our common species were still unknown, and that all field naturalists could help the herpetologists by observing amphibians and reptiles and recording their observations and all data as to the first appearance of the adults of the different species in spring, the length of the incubation periods, the development of the larval forms, etc.

Mr. Noble showed numerous lantern-slides of frogs, toads, salamanders, snakes and turtles, telling about the habits and habitats of the various species, and ending his talk by exhibiting several living specimens of salamanders and toads.

Dec. 27, 1921.—Regular Meeting. In the absence of the President and the Vice-President, the Secretary called upon Dr. Dwight to occupy the chair.

The minutes of the preceding meeting were read and approved.

Dr. Chapman stated that the American Museum was willing to defray the expenses of publishing the Linnæan Society's proposed list of birds of the New York City region, and hoped that the work of preparing the list would be started immediately.

The Secretary was requested to insert a notice in the next "Bulletin" of the New York Academy of Sciences, asking all members of the Society to hand in their notes for the local list as soon as possible.

Mr. Hix reported a Northern Shrike (*Lanius borealis*) and a Pine Siskin (*Spinus pinus*) at Long Beach, L. I., on Dec. 11, a Northern Shrike at Fort Lee, N. J., Dec. 18, and two of the same species at Bronx Park, Dec. 26, also a Ruddy Duck (*Erismatura jamaicensis*) on the last date in Jerome Park Reservoir.

Further field notes were postponed until the next meeting, and Dr. Frank M. Chapman gave a most interesting talk on "Problems in the Distribution of South American Birds."

Dr. Chapman first exhibited skins of 3 very closely related species and subspecies of South American Swallow belonging to the genus *Pygochelidon* which had formerly been considered one species, and showed on a colored map how one tropical species inhabited the northwest coast, extending south until it came under the influence of the cold Humbolt current, another was restricted to the southern parts of Argentina and Chile, while the third form had apparently come down from the interior of the continent and then turned north along the west coast, until it reached the tropical zone. The three forms had unquestionably had a common ancestor, but no intergrades had as yet been found between these three.

Taking up the Neotropical family Momotidæ, Dr. Chapman said that they had originated in southern Mexico and had spread southward from there. They had apparently invaded South America subsequently to the formation of the Andes, or in other words, quite recently geologically speaking, but probably before the most recent subsidence of the Panama region.

On the map, he showed the extension of different species southward along the west coast, eastward along the Caribbean Shore, and attempted to explain the presence of species in the Amazon region.

Dr. Chapman spoke of the altitudinal change from the tropical, through the subtropical and temperate to the arctic life zone on many of the mountain ranges of the Andes, and of the origin of all animal and plant life in the tropical zone and its gradual extension into the colder regions.

Jan. 10, 1922.—Regular Meeting. The Vice-President in the chair.

The minutes of the preceding meeting were read and approved as corrected.

The Secretary read letters from the New York State Library and the Zoölogical Society of London, asking for back copies of the "Abstract of Proceedings," and was requested to take the matter up with Dr. Tower, Librarian of the American Museum.

The Secretary read a letter from L. N. Nichols, addressed to Mr. Griscom, suggesting that the Society's Local Avifauna Committee be discharged and an Editorial Board be created, consisting of six members, with Mr. Griscom as Editor-in-Chief, to prepare and publish the proposed local list of birds. He also read a letter from Dr. Frank M. Chapman to Mr. Griscom, notifying him that the preparation of a local avifauna list, to serve as a Museum Guide-book, had been delegated to him, and expressing the hope that he would be able to secure the fullest possible coöperation from the Linnæan Society in his work of preparing the list.

After discussion it was agreed that the Local Avifauna Committee could advantageously coöperate with the American Museum in this matter, Mr. J. T. Nichols having withdrawn from the committee, so as to place its chairmanship in Mr. Griscom's hands, and have the Society's and Museum's interests in the local avifauna vested in the same person. Mr. L. N. Nichols was later appointed a member of the Committee, which stands as follows: Mr. Griscom (Chairman), Dr. Janvrin and Mr. L. N. Nichols.

The program of the evening was the recording of field observations by members.

The Secretary reported for Mr. Charles Johnston a Snowy Owl (*Nyctea nyctea*) observed at Long Beach, L. I., Dec. 26—also about 100 Snow Buntings (*Plectrophenax n. nivalis*) and 2 Lapland Longspurs (*Calcarius l. lapponicus*), and at Pelham Bay, N. Y., Dec. 31, a Rough-legged Hawk (*Archibuteo lagopus sancti-johnnis*) and a Northern Shrike (*Lanius borealis*).

Mr. J. T. Nichols spoke of having seen about 170 Coots (*Fulica americana*) at Mastic, L. I., Dec. 26, and reported for Mr. L. O. Williams a Sapsucker (*Sphyrapicus v. varius*) and a Red-breasted Nuthatch (*Sitta canadensis*) at Princeton, N. J., Jan. 5.

Mr. Urner, for the Elizabeth, N. J., region, reported 5 Cowbirds (*Molothrus a. ater*) and a Red-headed Woodpecker (*Melanerpes erythrocephalus*), Dec. 26, and a Snowy Owl on

Jan. 1. The latter had been first seen by some hunters on Dec. 26.

Mr. Howland reported that six Vesper Sparrows (*Poæcetes g. gramineus*) had been seen at Montclair, N. J., by Mr. Robert Barbour, on Dec. 26, and then told of some of the results of his own bird-banding work at Montclair during 1920-1921. Out of 193 birds banded he had had 7 returns, these being Robins (*Planesticus m. migratorius*), Song Sparrows (*Melospiza m. melodia*), Juncos (*Junco h. hyemalis*), and White-throats (*Zonotrichia albicollis*).

Jan. 24, 1922.—Regular Meeting. The Vice-President in the chair.

The following field observations were reported by members:

Mr. Carter had been to Long Beach, L. I., on the day of the meeting, with Mr. Griscom, where they had seen two Glaucous Gulls (*Larus hyperboreus*), one Iceland Gull (*Larus leucopterus*), a Gannet (*Sula bassana*) and a Cowbird (*Molothrus a. ater*), and a total of 26 species.

Mr. Marks, for the Arlington, N. J., region, reported a Northern Shrike (*Lanius borealis*), Jan. 2.

Mr. Hix had seen 25 Meadowlarks (*Sturnella m. magna*) near Englewood, N. J., Jan. 15. Mr. Friedman and Mr. Urner, on Jan. 15, near Elizabeth, N. J., had observed an Iceland Gull, 1 Snowy Owl (*Nyctea nyctea*), 1 Red-headed Woodpecker (*Melanerpes erythrocephalus*), 1 Northern Shrike (*Lanius borealis*), 25 Snow Buntings (*Plectrophenax n. nivalis*), 1 Sharp-tailed Sparrow (*Passerherbulus caudacutus*) and 4 Cardinals (*Cardinalis c. cardinalis*).

Mr. Crosby, at Rhinebeck, N. Y., reported a Redpoll (*Acanthis l. linaria*) on Jan. 12, 17 Pine Grosbeaks (*Pinicola enucleator leucura*) on the 15th, and 4 more on the 20th. On the 22d, he had seen a Northern Shrike attacking a Sapsucker (*Sphyrapicus v. varius*), which fell, crying out piteously, after being knocked down in the snow by the Shrike. Mr. Crosby also reported the following results of his bird-banding work at Rhinebeck:

Junco (*Junco h. hyemalis*), banded Feb. 28, 1920; recaptured Dec. 5, 1921.

Junco, banded Mar. 19, 1920; recaptured Jan. 22, 1922.

Junco, banded Jan. 21, 1920; recaptured Jan. 23, 1922.

Chickadee (*Penthestes a. atricapillus*), banded Mar. 22, 1920; recaptured Oct. 14, 1921.

Chickadee, banded Mar. 18, 1920; recaptured Jan. 23, 1922; also Feb. 1921.

The paper of the evening was presented by Dr. Jonathan Dwight, entitled "Notes on the Geographical Distribution of Pattern in the Gulls of the World."

The speaker first said that first year gulls could be distinguished from older birds by their pointed, instead of rounded, tips of the primaries, and the rounded, instead of square, tips of the rectrices, and stated that the small species of gulls acquire their adult plumage at the end of the first year, the medium-sized ones at the end of the second year, and the largest species not until they were three or perhaps four years old.

Taking up the different plumage patterns, Dr. Dwight said that all adult gulls had white tails, with the exception of five species that had banded tails, Franklin's Gull (*Larus franklini*) with the two middle rectrices gray and a species in the Galapagos Islands with an entirely gray tail. These species with banded or gray tail-feathers seemed to be mostly of southern origin.

The black-headed gulls were found both in the northern and southern hemispheres; and the same can be said of the brown-headed species—*Larus ridibundus* being found in Europe and Asia, two species in Argentina, one in India and one on the Red Sea.

Taking up the patterns of the primaries, Dr. Dwight divided the species into four groups—1st, those with black primaries, represented by *Larus atricollis*, *L. heermanni*, *L. modestus*, *L. fuliginosus*, *L. crasirostris*, etc., 2d, those with white primaries, such as the Ivory, Glaucous, and Iceland Gulls; 3d, *Larus glaucescens*, with gray primaries; and 4th, the largest group, those with spotted or bicolored primaries. The species with the spotted primaries were apparently confined to the northern hemisphere.

With regard to the color of the mantle, there seemed to be no definite correspondence between it and the ranges of the species, for instance, of two black-backed gulls, one, *Larus marinus*, belonged to the northern hemisphere, and another, *Larus dominicus*, to the southern. The darkness of the mantle might, however, have something to do with the fogginess of the region inhabited by the species.

After discussion by members, in which it was brought out by Mr. Weber that the darker-colored gulls were more primitive than the lighter ones, the meeting adjourned.

Feb. 14, 1922.—Regular Meeting. The Vice-President in the chair.

The Secretary read a letter from Mr. Howard H. Cleaves to Mr. J. T. Nichols, saying that he intended to publish a report on his bird-banding work and asking whether the Linnæan Society would help him financially in the undertaking. On motion, Mr. J. T. Nichols was appointed a committee of one to correspond with Mr. Cleaves and inform him that the Society was in sympathy with his work, but was not in a position to help defray his expenses at the present time.

The question of a dinner at the Annual Meeting of the Society on March 14th was then taken up, and, all the members present being in favor of it, the chair appointed the Secretary, Treasurer and Mr. Griscom a Committee to make arrangements for the dinner and to report at the next meeting.

Mr. L. N. Nichols read a report from his son, Edward G. Nichols, in Ceylon, listing 45 species of birds he had observed near Vaddukoddai in November and December, 1921. On Dec. 21st he had made a Christmas census of 25 species. Mr. L. N. Nichols reported a Horned Lark (*Otocoris a. alpestris*) at the Central Park Reservoir, Jan. 1st, and on Feb. 9th at the head of Pelham Bay, a pair of European Widgeons (*Mareca penelope*). He had a very good view of the head markings of the drake and felt sure of his identification.

Mr. Urner reported the Snowy Owl (*Nyctea nyctea*) still present on the Newark Marshes on Feb. 11th, and on the 13th, in the same region, he had seen two Bluebirds (*Sialia s. sialis*) and eight Pintails (*Dafila acuta*).

Mr. J. T. Nichols then gave an informal talk entitled "Further Notes on the Greater (*Totanus melanoleucus*) and Lesser Yellowlegs (*Totanus flavipes*)," illustrated by skins and skeletons of the two species.

He stated that in his opinion the two Yellowlegs were not closely related as one might suppose from their similarity in coloration, as they differed markedly in their structure, *Totanus melanoleucus* having a relatively much longer bill, smaller head and shorter legs than *T. flavipes*. In the latter species the long legs were due to the lengthening of the tibiae. In the latter species, also, nares extended much further down the bill than in *T. melanoleucus*.

The speaker thought that the Lesser Yellowlegs was the more primitive species, on account of its structure and more specialized migration route, and that the color of the Greater was an example of mimicry.

The Lesser Yellowlegs resembled most closely the European Redshank (*T. totanus*), while the Greater was apparently closely related to the European Greenshank (*T. nebularia*). In addition to these four species, Mr. Nichols placed the Dusky or Spotted Redshank (*T. fuscus*) and the Marsh Sandpiper (*T. stagnatilis*) in the genus *Totanus*, and arranged them in the following order of relationship, beginning with the most primitive form: Lesser Yellowlegs, Redshank, Greenshank, Greater Yellowlegs, Marsh Sandpiper and Dusky Redshank.

Feb. 28, 1922.—Regular Meeting. The Vice-President in the chair.

The Vice-President read a telegram from Mr. Howard H. Cleaves, asking whether the Society would donate \$50.00 toward his bird-banding report. No action was taken by the Society.

Mr. William Chamberlain, of 538 West 114th Street, whose name had been proposed on January 10th, was elected a Resident Member.

Mr. Hix reported finding a moribund Dovekie (*Alle alle*) washed up on the beach at Long Beach, L. I., on Feb. 19th.

He put it back in the water, but it was too weak to escape and was washed ashore again. Its feathers were oil-soaked. Later in the day the bird died and the body was presented to the American Museum by Mr. Hix. Mr. Hix also found the carcass of an Opossum (*Didelphis v. virginiana*) at Englewood, N. J., on Feb. 22d.

Mr. Bowdish spoke of a second Northern Shrike (*Lanius borealis*) that had entered his trap at Demarest, N. J., and had seen his first Fox Sparrow (*Passerella i. iliaca*) of the year on Feb. 24th.

Mr. Friedman reported a Flicker (*Colaptes auratus luteus*) at Prospect Park, Brooklyn, Feb. 26th.

Mr. Urner said that Feb. 19th was the last date on which he had seen the Snowy Owl (*Nyctea nyctea*) in the Newark Marshes. On Feb. 25th, in the same locality he had seen a female Hooded Merganser (*Lophodytes cucullatus*), 25 Red-winged Blackbirds (*Agelaius p. phæniceus*) and 15 Pipits (*Anthus rubescens*).

The Secretary exhibited a specimen of *Ammodytes americanus*, the so-called Sand Eel, found washed up on the beach at Long Beach, L. I., on Feb. 25, and presented it to the Department of Ichthyology of the American Museum.

Dr. G. Clyde Fisher then gave a talk entitled "Observations on Some of our Local Mammals," illustrated by lantern-slides. He told of experiences he had had with Opossums (*Didelphis v. virginiana*) that "played possum," of young Raccoons (*Procyon l. lotor*) he had taken from the nest in a hole of a dead tree, and of a Florida Gray Fox (*Urocyon cinereoargenteus floridanus*) that climbed a tree when pursued by dogs. He also spoke of some of the habits of the Red Fox (*Vulpes fulva*), the Woodchuck (*Marmota m. monax*) and other common mammals, and concluded his talk by telling of a pet Gray Squirrel (*Sciurus carolinensis leucotis*) that, when taken to Florida, acquired the unique habit of eating his meals while reclining on his back.

March 14, 1922.—Annual Meeting held at the American Museum of Natural History. In the absence of the president,

vice-president, and treasurer, the secretary called upon Mr. J. M. Johnson to occupy the chair. Twenty-seven members and fourteen visitors present.

(The meeting was preceded by the Tenth Annual Dinner in the Mitla Room of the museum, attended by twenty-six members and 11 guests.)

The minutes of the preceding meeting were read and approved as corrected.

Mr. Clifford H. Pangburn of 299 Madison Avenue, proposed at last meeting, elected a resident member.

The secretary read excerpts from two letters by H. H. Cleaves to J. T. Nichols, asking whether the Linnæan Society would help finance his proposed report on bird-banding.

Moved, seconded, and carried that the Society should contribute \$50 to Mr. Cleaves.

Mr. Crosby read a letter to Mr. Howland from E. W. Nelson of the United States Biological Survey, concerning Bird-banding Association for Middle Atlantic States. Matter laid on the table.

Treasurer's report read by secretary; accepted and referred to auditing committee.

The paper of the evening by Mr. James P. Chapin was entitled "African Birds in the Museums of Europe" and was illustrated by lantern-slides, showing various museums in Germany, Austria, England, Belgium, and other European countries, as well as some prominent ornithologists of the Old World, and a few of the African birds which aroused his special interest. As a result of measurements and comparisons made during this trip, Mr. Chapin proposed to separate the well-known Paradise Whydah (*Steganura*) into two distinct species which are represented in various parts of the African continent by five geographic forms. The curious distribution of the large- and small-billed races of the Weaver-finch (*Pyrenestes*) was shown to be dependent upon the extent of the West African forest, which harbors the small-billed varieties, while those with very stout beaks are found only in the neighboring grasslands. The variation in the horns of

African guinea-fowl was illustrated from sketches made in various museums and was shown to depend largely upon geographic distribution. All the forms which live close to the equatorial forest have very low protuberances, and the longest-horned guinea-fowl are found in the open arid plains of eastern and southern Africa. The Congo Museum at Tervueren, Belgium, was an institution of special interest and was found to have made great progress in its zoölogical work since the speaker had visited the new building, then just completed, in May, 1909.

SECRETARY'S ANNUAL REPORT, 1921-1922

During the past year the Linnæan Society has held fifteen meetings, the first November one being omitted owing to conflict with the annual meeting of the American Ornithologists' Union, with a total attendance of 430. The Ninth Annual Dinner was attended by thirty-four members and guests, and twenty-eight members were present at the Annual Meeting the same evening. At the remaining fourteen meetings the total attendance averaged 27.5, that of members 15—that is, the total attendance and the attendance of members were both greater than in the preceding year. The largest number present at any one meeting was 73 (May 10th), of members 28; the smallest was 12.

The society has lost by death during the past year one Honorary Member (Dr. J. A. Allen), two corresponding members (Mr. John Burroughs and Mr. Charles B. Cory) and one resident member (Mr. H. A. Cassebeer, Jr.). One Honorary Member (Dr. Jonathan Dwight) and eleven new resident members have been elected. The membership list now stands: resident, 97; corresponding, 24; honorary, 3; total, 124. (Largest since 1916 when membership was the same.)

Twelve papers have been presented before the society—five of them on ornithology, three on the natural history of expeditions, two on mammalogy, one on herpetology and one on John Burroughs. Three evenings were devoted to field observations.

Owing to the high cost of printing, the society decided to postpone the publication of its "Abstract of Proceedings" for the year ending March 8, 1921, and to combine it with the "Abstract" for the year ending with to-night.

Your secretary, after holding office for two years, finds that, on account of increased professional and other duties, he will be unable to continue in office any longer. He sincerely regrets this, inasmuch as the work connected with the secretaryship has been a keen pleasure to him, and he would gladly continue in office, if he had the time to devote to it. He therefore begs you to elect another secretary at this meeting and

thanks you for the honor you have bestowed upon him during the past two years.

E. R. P. JANVRIN,
Secretary.

March 29, 1922.—Regular Meeting. The President in the chair.

The president appointed the following committees for the year 1922–1923:

Committee on Membership: Messrs. Dwight, Chubb, and Pearson.

Committee on Finances: Messrs. Pearson, Dwight, and Murphy.

Auditing Committee: Messrs. Murphy and Noble.

Committee on Papers and Lectures: Messrs. Chapin, Murphy, and Fisher.

Committee on Publication: Messrs. Chapin, Griscom, and Janvrin.

Committee on Local Avifauna: Messrs. Griscom, Janvrin, and L. N. Nichols. In each case the first-mentioned is the chairman.

Messrs. Hix, L. N. Nichols, Marks, Urner, Howland, Williams, Crosby, and Bowdish reported on the progress of the present spring migration. Among the many recent records, the following seem to be of particular interest:

A Northern Shrike (*Lanius borealis*), at Leonia (N. J.) railroad station, March 26, 1922, by Mr. Laidlaw Williams. This shrike was seen to carry a mouse in its feet, and Mr. J. T. Nichols remarked that he had seen these birds on several occasions carry small birds in their claws.

A Pied-billed Grebe (*Podilymbus podiceps*), Rhinebeck, Dutchess Co., N. Y., Mar. 22, 1922, and Hooded Merganser (*Lophodytes cucullatus*), Green-winged Teal (*Nettion carolinense*), and Pintail (*Dafila acuta*), at the same locality, March 25, 1922, by Mr. M. S. Crosby.

One female Shoveler (*Spatula clypeata*), at Princeton, N. J., March 26, 1922, by Mr. G. E. Hix. This bird was first seen by Mr. Charles Rogers on March 22d.

During the past winter, Mr. R. S. Williams had seen a Cardinal (*Cardinalis c. cardinalis*) a few times in Bronx Park, said Mr. L. N. Nichols.

Mr. R. H. Howland reported the following returns of banded Song Sparrows (*Melospiza m. melodia*), at Upper Montclair, N. J.:

No. 47,150; banded May 10, 1921, and retaken May 15; returned Feb. 13, 1922.

No. 44,699; taken Nov. 11, 1920; repeated twelve times to March 6, 1921; returned Oct. 27, 1921, and repeated fifteen times to March 4, 1922.

No. 48,475; taken May 30, 1921; repeated fifteen times to Aug. 21, 1921; returned March 19, 1922, and repeated the same day and that following.

No. 47,143; taken April 12, 1921; repeated twenty-eight times to Oct. 16; returned March 23, 1922, and has repeated March 26.

The remainder of the meeting was devoted to an illustrated lecture by Mr. O. P. Medsger of Arlington, N. J., on "Wild Flowers and their Insect Visitors." The insects which are of most importance in the fertilization of flowers are bees, moths, and butterflies. The Honey-bee is not a native of North America, but was introduced from Europe; so it is not surprising that it should be better adapted to visiting European species of flowering plants of which many of course have also become established in our country. We do, however, have many other kinds of bees, especially Bumble-bees, which are of importance in this connection.

After a word on wind pollination and the parts of the flower concerned in fertilization, the speaker proceeded to take up special cases of insect pollination, illustrating each case with beautiful photographs of the flowers discussed, and often with various insects upon them. The Skunk-cabbage, though seldom visited by bees, is served in much the same way by small flies, as ill-smelling blossoms like the *Trillium* are apt to be.

Mr. Medsger thought that a great deal was still to be done in our country in establishing the true relations between flow-

ers and insects. Certain results of work done in Europe have not yet been borne out in the case of American plants; and the National Research Council is promoting a coöperative plan of work by botanists, entomologists, chemists, and physicists, on this complex subject.

Many small flowers seem to be fertilized in ways as yet unrecorded. The speaker has as yet seen no insect visiting the Indian Pipe, and whereas the European species of *Lillium* were said to be fertilized by bees, the red American species may be dependent upon moths. Although, as is well known, the violets produce most of their seed from cleistogamous flowers, insects do nevertheless often visit the others. The Purple-flowering Raspberry is probably frequently self-fertilized, and the Trailing Arbutus has so many imperfect flowers that for a long time the nature of its fruit was incorrectly given even in manuals of botany.

The flowers of the Labiatæ, or Mint family, often have an elaborate mechanism for brushing the bees that enter them, and *Linaria* (Butter-and-Eggs), among the Scrophulariaceæ, is wonderfully fitted to receive bees, which, alighting on the lower lip, bear it down, and the entrance opens. The Lady-slipper Orchids are well arranged for cross-fertilization through the same agencies. The opening is so small that the insects find their way out with difficulty, and the speaker had found a bumble-bee thus imprisoned, which could never have made its exit. Milkweeds are visited by many different insects, and the flower is so arranged as to hold them fast for a while. Even the Closed Gentian is not self-fertilized, and Bumble-bees have been seen working their heads into the top and thus gaining entrance. In the case of the Fringed *Polygala*, nevertheless, which seemed so well constructed for the convenience of the bees, Mr. Medsger and Dr. Lutz have not found bees alighting on the lip. Instead, the Bumble-bees cut holes in the back of the flower, and other bees then profit by these same openings.

Among the plants which the speaker has found to be popular with Honey-bees in the Eastern States may be listed: *Iris*,

Linaria, Wild Geranium, Tulip-tree, Mountain Laurel, American Linden. Other small bees came to the True Solomon's Seal, 2-leaved Solomon's Seal, White Baneberry, Bluet, Rose-Mallow. Bumble-bees were mentioned as coming to the Lady-slippers, *Trillium*, Mandrake, Wild Geranium, Red Clover, *Linaria*, Gentians, Columbine, *Polygala*, and Thistles.

The Wild Carrot, in this country at least, is fertilized mainly through the visits of flies, which were also attracted to *Trillium*, the Skunk Cabbage, and White Baneberry. Besides the lilies noted above, moths regularly fertilize flowers of Evening Primroses (*Oenothera*), which open in the evening. On these yellow flowers, a yellow spider is often found lying in wait for small moths. Butterflies, which of course pay short visits to many different blossoms, were mentioned especially in connection with Red Clover, Bluet, Joepyweed, and Thistles.

April 11, 1922.—Regular Meeting. The President in the chair.

The auditing committee reported that it had examined the report of the treasurer, and found it correct. The report was thereupon accepted by the society.

Dr. G. C. Fisher told of a Woodcock (*Philohela minor*) picked up last autumn near the museum, which had been kept captive, and allowed to probe for earthworms placed in a box of earth. It would feed thus only in the evening, and after each probing operation it would rinse its bill in a cup of water which had been provided for it.

A Saw-whet Owl (*Cryptoglaux a. acadica*) was reported as seen on Apr. 8 at the Moravian Cemetery, Staten Island, by Mr. W. C. Van Dyne.

At Rhinebeck, Dutchess Co., N. Y., Messrs. Crosby and Griscom had seen: On April 1st, 6 Mallards (*Anas platyrhynchos*), 6 Baldpates (*Mareca americana*), and a pair of Ring-necked Ducks (*Marila collaris*). On April 2d, 1 Gadwall (*Chaulelasmus streperus*), 2 male Blue-winged Teal (*Querquedula discors*), 1 female Bufflehead (*Charitonetta albeola*), and 1 Saw-whet Owl.

Mr. Charles Johnston, at Long Beach, N. Y., on April 8th, had noted one Iceland Gull (*Larus leucopterus*).

The following new arrivals were reported by Mr. C. A. Urner, at Elizabeth, N. J.: Wilson's Snipe (*Gallinago delicata*) (March 30), Greater Yellow-legs (*Totanus melanoleucus*) (Apr. 8), Little Green Heron (*Butorides v. virescens*) (Apr. 9), Barn Swallow (*Hirundo erythrogastra*) (Apr. 9). On April 1st a Snowy Owl (*Nyctea nyctea*) and an Iceland Gull had still been observed in that vicinity.

On April 9th at Hempstead, Long Island, Mr. J. T. Nichols saw a Northern Shrike (*Lanius borealis*), the date being a late one for the neighborhood. He also noted 3 migrating Barn Swallows.

The remainder of the meeting was devoted to Doctor Fisher's address on Photographing our Native Birds. While the speaker had been working for the last nine years with a Graflex and even a motion-picture camera, he first showed how pictures of ornithological interest could be made at times with an ordinary kodak, illustrating this with one of his own early photographs of the nest of Bald Eagles (*Haliaeetus l. leucocephalus*) at Lewiston Reservoir, Ohio. As to whether the Indians or White men had originated the custom of hanging up gourds for the Martin to nest in the speaker was in doubt. He told of a case at Gainesville, Florida, where of 13 gourds thus offered as lodgings, 12 were occupied by Purple Martins (*Progne s. subis*), and of another group of 25 gourds, every one of which was in use.

The habit of the Loggerhead Shrike (*Lanius l. ludovicianus*) of impaling insects and even a tree-frog on the spikes of barbed wire was illustrated, and the killing of English Sparrows by these shrikes was described. The fact that Jays in feeding on acorns not only hold them with the toes, but also attack the softer lower side. The work of Sapsuckers on apple trees was commented on.

A Florida Cormorant (*Phalacrocorax auritus floridanus*) found suspended from a telephone pole at Orange Lake, Fla., was believed to have lost its life by slipping on the glass insulator where it had attempted to perch, and getting its neck wedged between insulator and pole.

While living in Florida, from 1907 to 1910, Doctor Fisher had often searched for Egrets, but never saw one. Not until a visit in 1915 did he finally succeed in finding them; and the same summer, on returning to New York, he learned that three American Egrets (*Herodias egretta*) were frequenting a pond at Van Cortlandt Park. Photos of one of these fine birds were shown, with subway station and apartment houses in the background, and even as it was being watched at short range by four ladies. Since that time Dr. Fisher has found both species of Egret becoming much commoner in Florida, thanks to protection.

April 25, 1922.—Regular Meeting. The President in the chair.

In the reports of recent observations of birds, Dr. Janvrin mentioned a Long-eared Owl (*Asio wilsonianus*) on April 24 in Central Park. This was the fourth occurrence on record in the park, and the first since 1905. A Ruby-crowned Kinglet (*Regulus c. calendula*) at Englewood on April 2 represented the earliest date for that locality.

On the morning of April 25 at Bronx Park Mr. Pangburn had seen four Lincoln Sparrows (*Melospiza l. lincolni*) together. The number was especially surprising. A White-breasted Nuthatch (*Sitta c. carolinensis*) nest also found there the same day might be considered correspondingly early.

Mr. Griscom said that he had seen an Iceland Gull (*Larus leucopterus*) from the Weehawken Ferry on April 16 of this year, and that a Saw-whet Owl (*Cryptoglaux a. acadica*) at Englewood on April 16 and a Northern Shrike (*Lanius borealis*) in Central Park April 14 were the latest dates he knew for the respective areas.

Mr. Wm. T. Davis reported that on April 10 he had watched a male Maryland Yellowthroat (*Geothlypis t. trichas*) for about half an hour through a prism binocular, in a swamp near the Moravian Cemetery, Staten Island. This is a very early record. He also stated that the Turkey Buzzard (*Cathartes aura septentrionalis*), at one time but rarely seen on Staten Island, is now becoming a more common visitor.

While he was watching the Yellowthroat, a Buzzard was seen flying over in the direction of New Jersey, and they are now quite often seen at Tottenville.

From Dutchess County, N. Y., Mr. M. S. Crosby mentioned the following arrivals of interest:

April 14, at Poughkeepsie, Chimney Swift (*Chaetura pelagica*) (2), Rough-winged Swallow (*Stelgidopteryx serripennis*) (1). April 15, at Rhinebeck, House Wren (*Troglodytes a. aëdon*), two have been seen almost daily since then. April 16, at Cruger's Island, Florida Gallinule (*Gallinula galeata*) (1). April 22, at Cruger's Island, Shoveller (*Spatula clypeata*) (3), and Solitary Sandpiper (*Helodromas s. solitarius*) (1).

Among new arrivals for the Elizabeth region, Mr. C. A. Urner reported on April 16 the Chimney Swift, Brown Thrasher (*Toxostoma rufum*), Spotted Sandpiper (*Actitis macularia*), and House Wren. On April 22 he had located a Wood Duck nest.

At Garden City on April 19 Mr. J. T. Nichols had seen his first House Wren and Mr. R. H. Howland reported that while he had seen the same bird at Upper Montclair for the first time on April 18, it had been reported from Islip, Long Island, on April 14 by Miss Jenks.

Next followed the lecture by Professor W. K. Gregory entitled "Notes on the American Museum Australian Expedition." With Mr. H. C. Raven as his assistant, the speaker had left last May for Australia, by way of Honolulu and Samoa.

They had arrived in southeastern Australia during the rainy season, and their trip to the mountains of New South Wales had been delayed by the swollen rivers. The devastation of the forests has been a great factor in the destruction of the mammalian fauna, and unfortunately the Eucalyptus trees burn easily.

While the Marsupials were the dominant stock in Australia, there were nevertheless some native placental mammals. The Dingo (*Canis dingo*) is a well-known example, but the Muridæ

must have been in Australia a long time, for they have undergone great adaptive changes, resulting in a development of a water rat with the molars much reduced in number, a hopping rat, as well as burrowing, and even semi-arboreal types. The remains of one rodent have been found in the Pleistocene, and these Australian rodents have their relatives in New Guinea and even in the Philippines.

Ornithologists are numerous and active in Australia, the movement in favor of conservation is a strong one, and enormous government reservations have been set aside.

On Tasmania the speaker dwelt at some length, describing its geology, some of its vegetation, and its aboriginal inhabitants.

During the subsequent discussion Professor Gregory added some details concerning fossil man in Australia, and the present day scarcity of aborigines in S. E. Australia.

May 9, 1922.—Regular Meeting. The President in the chair.

The Secretary was instructed to cast affirmative ballots for Miss Ethel Adele Capen and Mr. Frederick Mortimer Capen, and they were declared members of the Society.

Recent bird-records were presented by members. Mr. Hix had observed at Long Beach: 1 Wilson's Snipe (*Gallinago delicata*) (April 19), a flock of about 500 Canada Geese (*Branta c. canadensis*), flying north (May 3), 14 Gannets (*Sula bassana*), only one of them adult (May 7), one Mourning Dove (*Zenaidura macroura carolinensis*) (May 7), and a flock of 5 Geese, flying over (May 7).

The following had been seen by Mr. Crosby at Cruger's Island, Dutchess County, N. Y.: Shoveller (*Spatula clypeata*), Apr. 27 and 30; Pintail (*Dafila acuta*), Apr. 30; Green-winged Teal (*Nettion carolinense*), May 1; Blue-winged Teal (*Querquedula discors*), May 1; Fox Sparrow (*Passerella i. iliaca*), May 1; American Merganser (*Mergus americanus*), May 5; Canada Warbler (*Wilsonia canadensis*), May 5; Canada Goose, May 5. At Rhinebeck, on May 4, Mr. Crosby saw a Brewster's Warbler (*Vermivora pinus* × *V. chrysop-*

tera) a Tennessee Warbler (*Vermivora peregrina*), and a Palm Warbler (*Dendroica p. palmarum*).

A White-crowned Sparrow (*Zonotrichia l. leucophrys*) in Central Park, discovered by Miss Samek on May 3, was stated by Mr. Griscom to be the earliest record for the park, as was also a Magnolia Warbler he saw on the same day. A Blue-gray Gnatcatcher (*Polioptila c. cærulea*) was also in the park on May 3, and a Mourning Dove on May 6. At Englewood, April 30, Mr. Griscom noted the latest Pintail for that neighborhood, and on May 7 he and Dr. Janvrin had witnessed an important migratory flight in the same locality. 78 species were seen, including 2 Golden-winged Warblers (*Vermivora chrysoptera*), 1 Tennessee Warbler (*Vermivora peregrina*), 1 Canada Warbler (earliest), and a Gray-cheeked Thrush (*Hylocichla a. aliciae*). Mr. Griscom also reported that at Long Beach a Purple Sandpiper (*Arquatella m. maritima*) had been seen on May 4 by Mr. Bicknell, and an Iceland Gull (*Larus leucopterus*) and a Common Tern (*Sterna hirundo*) on May 6 by Mr. Charles Johnston. On May 6, from Washington Square, New York City, Mr. Johnston had watched 4 Canada Geese flying over.

Mr. L. N. Nichols reported a Palm Warbler, with 7 or more Yellow Palms, (*Dendroica palmarum hypochrysea*) in Bronx Park, May 1. On the same day he also saw a Magnolia Warbler (*Dendroica magnolia*) there, and on May 8 at a pond east of Bronx Park, a Solitary Sandpiper (*Helodromas s. solitarius*).

Among the birds seen by Mr. Friedman at Long Beach on April 30 were 1 Glaucous Gull (*Larus hyperboreus*), 1 Semipalmated Sandpiper (*Ereunetes pusillus*), 1 Red-backed Sandpiper (*Pelidna alpina sakhalina*), and 1 Black-throated Green Warbler (*Dendroica virens*).

In the region of Elizabeth, N. J., Mr. Urner noted 64 species on April 29 and 30, including 12 new arrivals. One Long-eared Owl (*Asio wilsonianus*), on the 30th, was the latest recent record, and a Parula Warbler (*Compsothlypis americana usneæ*) and Wilson's Thrush (*Hylocichla f. fuscescens*),

on the same day, were new early records for Elizabeth, he believed. On May 6 and 7 he counted 83 species, including 24 new arrivals, and on the first of these days watched a male Bittern (*Botaurus lentiginosus*) display his white plumes before two females. On May 6 he also saw 9 Pipits (*Anthus rubescens*), and a flock of Bonaparte's Gulls (*Larus philadelphia*). Two White-crowned Sparrows were there on the 7th.

From Upper Montclair Mr. Howland reported a Yellow-breasted Chat (*Icteria v. virens*), April 30; and a Red-eyed Vireo (*Vireosylva olivacea*) and Yellow-bellied Sapsucker (*Sphyrapicus v. varius*), May 6.

Mr. Carter told of a colony of Black-crowned Night Herons (*Nycticorax nycticorax naevius*) he had recently visited at Boonton, N. J. About fifty nests were found.

The details for the regional lists were given as follows:

Orient, Long Island, 281 species; Mastic, Long Island, 229; Long Beach, 244; Central Park, 185; Bronx region, 222; Englewood, New Jersey, 235. These local lists showed what intensive observation over a considerable period of years could accomplish.

Especial pains had been taken to work out the flights of the rarer northern finches and it was found that the Pine Grosbeak (*Pinicola enucleator leucura*) had occurred in numbers ten times in 95 years and the White-winged Crossbill (*Loxia leucoptera*) 11 times in 74 years, showing that it was slightly the commoner species of the two.

May 23, 1922.—Regular Meeting. The President in the chair.

Miss M. C. Rich, Mrs. H. W. Smith and Mrs C. W. Mead were elected active members of the Society.

The program of the evening consisted of reports on the spring bird migration.

Mr. Crosby reported an exceedingly good spring migration in Dutchess County. On May 14, his party, including Dr. R. C. Murphy, had found 114 species, including a pair of Cerulean Warblers (*Dendroica cerulea*).

Upon inquiry by Mr. L. N. Nichols, as to whether the Ceru-

lean Warbler was moving eastward, Mr. Griscom said that there was considerable evidence that this was the case. The bird was steadily increasing eastward in western New York, as a summer resident, and had recently been found summering in the Catskills.

Mr. Hix (in litt.) and Mr. Fleischer, on May 17 and 21 respectively, reported unusual numbers of shore birds at Long Beach. Both had seen the Dowitcher (*Macrorhamphus g. griseus*), Knot (*Tringa canutus*), Pectoral (*Pisobia maculata*) and Red-backed Sandpipers (*Pelidna alpina sakhalina*), and also some very late Brant (*Branta bernicla glaucogastra*).

Mr. L. N. Nichols reported a large flock of warblers in the Bronx region on May 15, which included a Gold-winged (*Vermivora chrysoptera*). He had also seen the Lincoln's (*Melospiza l. lincolni*) and White-crowned Sparrows (*Zonotrichia l. leucophrys*) on the same day.

The chair then presented a brief summary of the migration by reading his article for the season's report in Bird-Lore. Favorable weather caused a steady migration throughout the first week in May, culminating in a great wave on May 10, after which transient species dwindled rapidly in numbers and the migration was practically over. Most of the birds had passed through very rapidly and the rarer species were scarcely recorded.

Mr. Griscom remarked that this summary was in exact accord with his experience. The big wave of May 10 yielded no less than 66 species in Central Park, there were less than 20 on May 12, and barring May 21 there had been practically no migration during the rest of the month. In other words, the migration ended at just about the time when birds normally were beginning to become common. At Englewood, on May 14, his annual try for a big day had been a total failure.

Mr. Urner reported 96 species as a combined week-end list for May 13-14 near Elizabeth, N. J. Of special note were the Short-eared Owl (*Asio flammeus*) and Pipit (*Anthus rubescens*) on May 13 and on May 21 an Acadian Sharp-tailed Sparrow (*Passerherbulus nelsoni subvirgatus*) (with the ordinary species).

Mr. Crosby's mention of several Brewster's Warblers (*Vermivora pinus* \times *V. chrysoptera*) seen this season led to a discussion of the Mendelian theory of hybridization, and a brief summary of this theory was presented by the Chair.

October 10, 1922.—Regular Meeting. The President in the chair.

Miss L. E. Woodward, Dr. George B. McAuliffe and Miss Caroline Plant were declared elected active members of the Society.

The publication of the abstract of proceedings was discussed, Mr. Griscom calling attention to the advisability of publishing an annual summary of local conditions with regard to birds. On motion by Mr. Crosby, it was decided that the abstract should be published, with or without a summary of the year's ornithological conditions, at the discretion of the committee on publication.

The program of the evening was a discussion by the members of their observations during the past summer.

Dr. Janvrin described a visit he had made to Jones' Beach, Long Island, with Messrs. Griscom, Crosby, and J. M. Johnson, on May 27 and 28, 1922. On the first day Mr. Crosby flushed a Bittern (*Botaurus lentiginosus*) from its nest, which contained 5 young; and a Least Tern (*Sterna antillarum*) and three White-rumped Sandpipers (*Pisobia fuscicollis*) were also noted. On the 28th a Savannah Sparrow's (*Passerculus sandwichensis savanna*) nest was discovered, with 4 eggs. The other birds of special interest seen on the second day were: Iceland Gull (*Larus leucopterus*), 1; Least Tern, 2; Least Bittern (*Ixobrychus exilis*), 2; Little Black Rail (*Creciscus jamaicensis*), 2; White-rumped Sandpiper, 16; Red-backed Sandpiper (*Pelidna alpina sakhalina*), 4.

Mr. G. E. Hix reported a Migrant Shrike (*Lanius ludovicianus migrans*) from Englewood, N. J., on August 27 and a number of other birds from Long Beach, L. I., especially a Bittern (July 12), a Least Tern (July 16), a Duck Hawk (*Falco peregrinus anatum*) (Oct. 8), 12 Brant (*Branta bernicla glaucogastra*) (Oct. 10), and a Yellow-breasted Chat (*Icteria v. virens*) (Oct. 10).

Mr. S. H. Chubb had spent the period from June 13 to July 13 on Matinicus Island, 20 miles off the coast of Maine, and mentioned the smaller land birds breeding there, Savannah Sparrows being very abundant. On neighboring islands there were colonies of water birds, Tenpound Island having at least 2,000 nests of Herring Gulls (*Larus argentatus*). These nests contained from 1 to 3 eggs, in a single case 4. The Northern Raven (*Corvus corax principalis*) also bred there, but the single nest seen was already deserted. Matinicus Rock was visited on July 10th, and was found to be occupied by Arctic Terns (*Sterna paradisæa*), whose young were faring badly, according to lighthouse keepers, as a result of the cold, damp weather. A few Black Guillemots (*Cepphus grylle*) also nest there.

Mr. L. N. Nichols, on May 24, had observed a Wilson's Snipe (*Gallinago delicata*) on the back of Long Beach, near Nassau-by-the-Sea. On June 26 he had found 4 Seaside Sparrows (*Passerherbulus m. maritimus*) and 2 Sharp-tailed Sparrows (*Passerherbulus caudacutus*) singing in the Baychester Marshes, Bronx, where they must therefore breed. In this same marsh the Long-billed Marsh Wrens (*Telmatodytes p. palustris*) are found only along the southwest side; and the Short-billed Marsh Wrens (*Cistothorus stellaris*) only near the eastern corner, closest to the Sound.

Mr. Griscom also spoke of the trip to Jones' Beach in late May, with Dr. Janvrin and other members. As for the present autumn migration, he had found a slight movement early in August, culminating on the 12th, but little more until August 27 and 28, when the Tennessee (*Vermivora peregrina*) and Cape May Warblers (*Dendroica tigrina*) were present, the first in unusual numbers. The months of September and October, to date, had been disappointing, the warm weather preventing any important waves, and marked flights occurred only on Sept. 25-26 and Oct. 4. On the whole, the birds had been late in arriving, and well below normal in abundance, the only exception being the Palm Warbler, which was more numerous than usual.

Recent records of note from Central Park, mentioned by Mr. Griscom, are as follows:

Common Tern (<i>Sterna hirundo</i>)	Aug. 22 (1st record)
Gnatcatcher (<i>Polioptila c. cærulea</i>)	Aug. 28
Connecticut Warbler (<i>Oporornis agilis</i>)	Sept. 22 and Oct. 5
Dickeissel (<i>Spiza americana</i>)	Oct. 4

With Mr. S. V. La Dow, over Sept. 4, he visited Montauk Point, and observed the following:

Roseate Tern (<i>Sterna dougalli</i>)	25
Golden-eye (<i>Clangula clangula americana</i>)	1
Little Blue Heron (<i>Florida cærulea</i>)	2
Baird's Sandpiper (<i>Pisobia bairdi</i>)	2
Migrant Shrike (<i>Lanius ludovicianus migrans</i>)	1 adult.

Mr. Ralph Friedman, during the months from May to August, had visited Cuba, Porto Rico, the Virgin Islands, as well as many of the Lesser Antilles. He had identified 21 species of the birds seen; but noted a number of others as doubtful, including a crow, of the same appearance as the American Crow (*Corvus b. brachyrhynchos*), on the islands of Antigua and St. Kitts, where no crow is known to occur.

Mr. Urner reported on the seasonable abundance and occurrence of a number of species near Elizabeth, N. J., this summer and autumn, as follows:

Short-eared Owl (*Asio flammeus*).—Nest with eggs nearly hatched found on salt marsh about May 22. Nest with 2 young about ten days old found July 4.

Savannah Sparrow.—First local summer records this year. A pair seen on the salt marsh, June 17, were apparently feeding young; others seen on July 4 and 23.

Little Blue Heron.—Nine seen on July 28, two on Aug. 10.

American Egret (*Herodias egretta*).—Three on Aug. 2; five on Aug. 9; four on Aug. 10.

Ring-billed Gull (*Larus delawarensis*).—Two on Aug. 2.

Upland Plover (*Bartramia longicauda*).—From Aug. 2 to Sept. 3; maximum number seen, 4.

Yellow-crowned Night Heron (*Nyctanassa violacea*).—One immature specimen seen Aug. 16 and Sept. 3.

Bonaparte's Gull (*Larus philadelphia*).—Eight seen on Aug. 20.

Mr. Crosby told of the nesting of the Cerulean Warbler (*Dendroica cerulea*), and of their occurrence this summer in Dutchess County, N. Y. They were first seen, a pair together, on May 14. Near Poughkeepsie two pairs nested. The first pair built two successive nests, both of which had been destroyed by natural causes.

The second pair was apparently more successful, since a male was seen feeding two fledged young on July 7. Others noticed in the vicinity were: two at Hyde Park, June 22; 1 at Rhinebeck, May 25, 26; 1 at Rhinebeck, June 23, 24; another at Rhinebeck, June 23; and the last at Poughkeepsie, Aug. 18. There were only 3 previous records of the Cerulean Warbler for Dutchess County, 1 on July 4, 1894, and 2 others on May 14 in different years.

Other bird records of especial interest, given by Mr. Crosby, were as follows: Cardinal (*Cardinalis c. cardinalis*), an adult male, Hyde Park, July 10, seen by Mr. Franklin D. Roosevelt; Solitary Vireo (*Lanivireo s. solitarius*), nest and four eggs, in a hemlock, Turkey Hollow, June 8, 1922; Knot (*Tringa canutus*), immature bird, Halcyon Lake, Pine Plains, July 30; Willet (*Catoptrophorus s. semipalmatus*), five, at Poughkeepsie, Sept. 1, by Allen Frost; Black Tern (*Hydrochelidon nigra surinamensis*), Cruger's Island, Sept. 9; Baird's Sandpiper (*Pisobia bairdi*), one collected by Ludlow Griscom, Poughkeepsie, Sept. 9; Philadelphia Vireo (*Vireosylva philadelphia*), one at Rhinebeck and one at Pine Plains, both Sept. 10; Blue-gray Gnatcatcher, a female collected by L. Griscom at Rhinebeck, Sept. 10; Red-breasted Nuthatch (*Sitta canadensis*), Cruger's Island, Sept. 29; Pine Siskin (*Spinus pinus*), Cruger's Island, Sept. 30; Mourning Warbler (*Oporornis philadelphia*), Rhinebeck, Sept. 23.

October 24, 1922.—Regular Meeting. In the absence of the President and Vice-President, the Secretary requested Mr. S. H. Chubb to preside.

The minutes of the preceding meeting were read and ap-

proved. The presentation of records was postponed until the next meeting.

Mr. T. Gilbert Pearson spoke on "The Impressions of a Bird-Lover in Europe," and described his experiences during a trip in behalf of the project of international protection for birds. He visited France, England, and Holland, and enjoyed many exceptional opportunities for visiting famous breeding colonies of birds.

In France he had been entertained especially by Monsieur Jean Delacour, one of the best-known aviculturists in Europe; and Mr. Pearson described a number of the common song-birds he found in that country, as well as the work of the French League for the Protection of Birds.

In England, Mr. Pearson was the guest of the Hon. Reginald McKenna and Viscount Grey, and a World Committee was formed in London for the protection of birds, whose activities, it is hoped, will soon be extended to the Far East. Mr. Pearson visited the Norfolk Broads in search of water fowl; and went to Selborne. A stained glass window has recently been placed in Gilbert White's church, depicting St. Francis and the birds, and including all the species mentioned in the works of Gilbert White. On the Farn Islands, off the coast of Northumberland, Mr. Pearson studied the colonies of Kittiwakes (*Rissa tridactyla*), Murres (*Uria troille*), and Puffins (*Fratercula arctica graba*), and told of the commercial value of the down from eiders' nests, which is only taken after the young have left, and, after cleansing, is sold.

The Royal Society for the Protection of Birds, in England, is the largest organization of its sort in Europe. In Holland the birds are looked after both by the Dutch Society for the Protection of Birds, and the Society for the Preservation of Natural Monuments. Dr. Burdett, well known for his photographs and motion pictures of birds, entertained Mr. Pearson at Haarlem; and he was taken to various colonies of water birds, especially those on the Island of Texel, where the numbers of individuals are astonishing. Slides were exhibited from photographs by Dr. Burdett, showing the Curlew (*Numenius*

arquatus), Long-eared Owl (*Asio otus*), Marsh Harrier (*Circus æruginosus*), Montagu's Harrier (*Circus pygargus*) and Sparrow Hawk (*Accipiter nisus*).

The scarcity of White Storks (*Ciconia ciconia*) in Holland during the two years past was believed by some of the Dutch ornithologists to have resulted from their dying in South Africa, during their sojourns there, after eating grasshoppers poisoned by farmers.

In another Dutch bird sanctuary expenses were met by cutting rushes that could be sold, and even by renting the shooting rights for ducks in the autumn. Protection was therefore still partial; but the debt on the property would soon be paid off, and no molestation would be permitted at any season. Photographs of the Spoonbill (*Platalea leucorodia*) were shown, the two colonies in Holland being all that remained in western Europe. Other slides showed the Purple Heron (*Pyrroherodia purpurea*), Little Grebe (*Podiceps ruficollis*), Common Gull (*Larus canus*), Snipe, Kentish Plover (*Charadrius alexandrinus*), Avocet (*Recurvirostra avosetta*), and Oyster-catchers (*Hamatopus ostralegus*). At one place Mr. Pearson had counted 83 Oyster-catchers in sight at once; and he estimated that there were more of them on the single island of Texel than of the American species on the whole Atlantic and Gulf Coast of the United States. From another island there were pictures of the Redshank (*Totanus totanus*), Black-headed Gull (*Larus ridibundus*), and a colony of Sandwich Terns (*Sterna sandvicensis*).

Mr. Pearson told of his experiences with the Ruff (*Philomachus pugnax*) and its spring dances. One could almost say that no two males in breeding dress are entirely alike. In one Dutch museum an exhibit of 22 mounted specimens showed no two identical in color. The birds come year after year to the same spots exactly for their mating performances. If the place be drained or even plowed, they do not desert it; indeed, Mr. Pearson was conducted to one such spot, over which a road had been built, and the birds still came. Seated in an automobile, he could watch them sparring fearlessly, as

many as 13 at a time. The male birds pair off, lunging at each other, jumping or flying up, and then changing partners, to begin anew. They would sometimes "freeze," remaining motionless for a minute or a minute and a half. Now and again, one bird quits the assemblage, and flies off to feed. Females are seldom present; and even when a female is in sight, the males pay little attention to her.

A discussion followed on the protection of the larger water birds of various countries, Mr. Pearson calling attention especially to the gloomy future for the egrets in North America.

November 14, 1922.—Regular Meeting. The President in the chair.

Mr. Crosby suggested that the Linnæan Society, in view of the present activity in bird-banding, take some action toward retaining its early prominence in such investigations. Messrs. Bowdish, Davis, and J. T. Nichols told of the origin of the American Bird Banding Association, whose function of centralizing records has now been assumed by the U. S. Biological Survey. On motion by Mr. L. N. Nichols, it was voted that the President be empowered to appoint a committee on bird banding.

A Junco (*Junco h. hyemalis*) (No. 27137) which had been banded by Mr. Crosby on Jan. 21, 1920, and recaptured in February and March of that year, was absent from the traps in the winter of 1920-21, but was caught again on Jan. 23, 1922, repeating on Feb. 3, 1922. It has returned once more and was trapped on Nov. 6, 1922, being again released.

Mr. Woodruff reported the capture of a White-footed Mouse (*Peromyscus leucopus*) in Central Park, New York City.

The announced program consisted of an illustrated lecture by Dr. G. K. Noble, on "Recent Observations on the Habits of Local Frogs and Toads."

Experimental studies on the relations between sound and the activities of frogs, by Professor Yerkes and others, had produced conflicting evidence; but laboratory workers were apt to doubt that female frogs were really attracted by the voices

of the males. Dr. Noble was inclined to believe that there was a connection between calling and mating, as a result of his prolonged observations on *Hyla andersoni* in the wild state.

The rapidity of overland migrations by frogs was illustrated by the croaking of Bull Frogs (*Rana catesbiana*) from some tanks in the Brooklyn Botanic Garden, the night after they were opened, though the nearest body of water was many blocks away, and the frogs were believed to have come from Prospect Park.

It was at Lakehurst, N. J., Dr. and Mrs. Noble had studied the habits of the Anderson Tree Frog, and taken the splendid flashlight photographs exhibited on the screen, which showed the males with fully distended vocal sacs, and all their activities leading up to the laying of the eggs by the female.

The Spade-foot Toads (*Scaphiopus holbrookii*) near Patchogue, Long Island, as discovered by Dr. Frank Overton, make short appearances almost every year, in temporary pools of water. Dr. Noble had remarkable flashlight pictures of them, showing how the "squawk" of the male is given as the air from the lungs is forced out into the throat. The squawking is done in concert, while the males lie floating on the water. The noise seems to attract the males, and this is why they gather in numbers in a single pond or part of the same pond, yet the reaction of the female to it is not known with certainty.

The embrace of the male spade-foot is not pectoral, but pelvic. The eggs are laid in a string, which is not wound around the grasses in the water, but back and forth across them. Reproductive activities continue through the night; but in the morning the "toads" disappear, some digging into the earth at the bottom of the temporary pool where the eggs have been laid.

A short discussion of Dr. Noble's work followed, and the story told of the rediscovery of the Anderson tree-frog at Lakehurst by Mr. W. T. Davis, who first showed how common a species it was in southern New Jersey.

November 28, 1922.—Regular Meeting. The President in the chair.

The Secretary read extracts from a letter of Mr. H. H. Cleaves, dated Nov. 14, 1922, in which he stated that his report on the work of the American Bird Banding Association from 1912 to 1920 was well advanced, but that it had been suggested that if the report were published by the U. S. Biological Survey, it would assure free distribution to all now associated in the work of banding birds.

Mr. Griscom and Dr. Chapman spoke in favor of allowing the report to be published by the Biological Survey, and on motion by Dr. Chapman the meeting voted that the Society favored publication by the Government, if the Biological Survey were desirous of so doing.

The Secretary read a paragraph from a letter of Mrs. H. W. Smith to the President, in which she told of finding an adult and a young Herring Gull (*Larus argentatus*), at Point of Woods, Long Island, Oct. 16 and 23, in such weakened condition as to be unable to fly. They later recovered and were liberated on Nov. 13. Some of her neighbors thought that the birds had eaten poison.

Mr. Hix said that he had frequently found Herring Gulls in such a state, on the Long Island beaches.

The President appointed the following members to the Committee on Bird Banding: Messrs. Howland (Chairman), Crosby, and Bowdish.

Mr. Griscom told of a Gray-cheeked Thrush (*Hylocichla a. aliciae*) which Mr. Courtenay Brandreth had collected near Ossining, N. Y., on Nov. 28, a very late date. When the bird was dissected to determine the sex, at the American Museum, it was found to have a very large tumor-like growth in the fore part of the abdomen, which may have been the cause of its lagging so far behind the normal migration of its species.

Mr. Hix reported a number of migratory birds which offered special interest because of the locality or the date when they were seen. A few of them may be cited: Kingbird (*Tyrannus tyrannus*), Van Cortlandt Park, Oct. 14; Cape May Warbler (*Dendroica tigrina*), Van Cortlandt Park, Oct. 14; Green-winged Teal (*Nettion carolinense*) (8),

Englewood Region, Oct. 15; Bobolink (*Dolichonyx oryzivorus*), Englewood Region, Oct. 15; Lesser Yellow-legs (*Totanus flavipes*) (10), Englewood Region, Oct. 15; American Scoter (*Oidemia americana*) (1 male), Englewood Region, Oct. 15; Turnstone (*Arenaria interpres morinella*) (1 immature), Long Beach, L. I., Oct. 18; Golden-eye (*Clangula clangula americana*) (1 male), Englewood Region, Nov. 12; Bald Eagle (*Haliaeetus l. leucocephalus*) (1 immature), Long Beach, L. I., Oct. 20.

Mr. Weber mentioned having seen 2 Purple Sandpipers (*Arquatella m. maritima*) at Barnegat, N. J., on Nov. 22.

Mr. Marks told of a Long-eared Owl (*Asio wilsonianus*) seen in the streets of Arlington, N. J., on November 12.

Dr. Chapman had observed a Snowy Owl (*Nyctea nyctea*) at the Englewood Golf Links on November 4, and seven Horned Larks (*Otocoris a. alpestris*).

The announced program consisted of an address by Dr. F. M. Chapman, on "A Summer in Ecuador," in which he described his ornithological exploration of Ecuador, especially during the past summer. The climate of Ecuador was not a very hot one, and especially not during its dry season, which comes at the same time as our northern summer. Though the smallest of South American republics, Ecuador probably has the largest bird fauna, in point of species, of any similar area in the world.

Few Ecuadorian birds were named by Linnæus or his contemporaries. About 1846, Jameson, a Scotch professor of botany at Quito, sent many birds home, and some ten years later Dr. Sclater sent Louis Fraser on the first real ornithological expedition into Ecuador. But none of the early collectors gave the localities where they worked with sufficient exactness. To understand the zonal distribution of birds in the Andes, it is necessary to visit the country in person, and only then can the earlier collections be understood.

The species of birds living in Ecuador must number close to 2,000, or twice as many as in North America north of Mexico. It is a center for humming-birds, of which there are

over 150 species. Some of the mountains have peculiar species of hummers, living high up near the snow, as does *Oreotrochilus jamesoni* on Mt. Pichincha. The Condor likewise is confined to the higher levels in the mountains.

The climate is very different in various parts of Ecuador. The northern half is very humid, as is the eastern portion, toward the Amazon valley. The southern half of the Pacific slope is arid, forming a transition to the desert conditions a little farther south. Dr. Chapman's party was fortunate in securing a large launch with which to investigate the Gulf of Guayaquil. There a number of North American shore-birds were found, during the northern summer, when one would have expected them to be on their breeding grounds in the north. There were Dowitcher (*Macrorhamphus g. griseus*), Willet (*Catoptrophorus s. semipalmatus*), Hudsonian Curlew (*Numenius hudsonicus*), and Black-bellied Plover (*Squatarola squatarola*), as well as the Common Tern (*Sterna hirundo*). Dissection showed all the shore-birds to be in non-breeding condition, and this may explain why the impulse to migrate was lacking. The creeks of this region are bordered with mangroves; and about the Santa Rosa River, Limpkins, Jacanas, Herons, Ducks, and other waterfowl are very abundant.

It was through this region that Mr. George K. Cherrie made his heroic journey, after accidentally shooting himself in the arm; and Dr. Chapman gave a vivid description of the fortitude shown by Mr. Cherrie in pursuing the river steamer, which alone could carry him to Guayaquil and save his life.

Just to the northwest of Guayaquil at a distance of 20 miles there are hills little known to the city-dwellers, which have, as Dr. Chapman found, luxuriant tropical vegetation and a considerable fauna, including monkeys. But it was the railroad journey up to Junto in the Andes, and travels by mule-train, in these rugged mountain regions, which offered the most magnificent scenery. On the way a stop was made at the Chimbo valley, where the life zones come far lower down than in Colombia, as a result, it is believed, of the effect upon

the climate of the cold Humboldt current off the coast. It causes fogs, and the continual humidity does away completely with any dry, quiescent period for the vegetation. In the isolation of this valley, new forms of birds appear to arise, as for instance a finch of the genus *Buarremon*, remarkably similar to another wide-ranging mountain species, but lacking entirely the black band across the chest.

Native collectors of birds are very active in the Quito region, but their material thus far has not had great scientific value, because they failed to label it carefully as to locality. They were apt to use a single name of a village for all the specimens secured over a long trip across country, up and down the mountains. But they know the birds well, and have invented their own names for the majority of species. As an example of their efficiency, Dr. Chapman told of the liberation of 5 California Quail (*Lophortyx c. californica*) near Quito, the birds having been brought from Chile. Within a week, four of them had fallen victims to the native collectors, and had been brought to Mr. Suderstrom, for he often purchased specimens of the native birds, and had sent many of them home to European museums.

A further account was added of trips into the mountains from Quito, and the difficulties of travel amusingly described, with anecdotes concerning local revolutions, pack mules, and all that rendered life in Ecuador so picturesque.

December 12, 1922.—Regular Meeting. The President in the chair.

There being no business to transact, the presentation of bird records was first taken up. Mr. Griseom spoke of a Northern Shrike (*Lanius borealis*) he had seen in the Englewood region on December 3, which was in full song.

A Towhee (*Pipilo e. erythrophthalmus*) was noted by Mr. Williams at Englewood on December 9.

Mr. Pangburn found a Catbird (*Dumetella carolinensis*) in Bronx Park on December 1.

The migration dates of Bonaparte's Gull (*Larus philadelphia*) in the neighborhood of New York were discussed by Mr.

J. T. Nichols, who questioned whether the species was truly a winter resident, in view of its rarity from January to March.

Mr. Urner reported the Long-billed Marsh Wren (*Telmato-dytes p. palustris*) from Elizabeth, N. J., on December 3.

Mr. L. N. Nichols read extracts from a letter from his son, Edward, now in Ceylon, describing and listing some 50 species of birds observed there, with remarks on the habits and voices of many of them.

The announced program for the meeting was a discussion of faunal zones in the region adjacent to New York; and it was opened by Mr. Griscom reading a portion of the chapter in his new work on the local avifauna which deals with the question of zonal distribution. Detailed discussion followed by Mr. Miller, J. T. Nichols, W. R. Boulton, Dr. G. K. Noble, Mr. Chapin, and other members.

December 26, 1922.—Regular Meeting. The Vice-President in the chair.

The Committee on Bird Banding, through Mr. Howland, chairman, suggested that one of the April meetings of the Society be devoted to the subject of banding, and that Mr. S. P. Baldwin be invited to address it. The Committee has development of local bird-banding activities in hand, and does not feel that the organization of a new bird-banding association in the region of New York is necessary or advisable. On motion by Mr. L. N. Nichols, it was voted that Mr. Baldwin should be invited to address a meeting in April.

At Demarest, N. J., Mr. Bowdish said that Fox Sparrows (*Passerella i. iliaca*) and White-throated Sparrows (*Zonotrichia albicollis*) were seen far more regularly than usual during the month of December past. Two Towhees (*Pipilo e. erythrophthalmus*) have also been wintering in that vicinity, and have both been banded. Two Tree Sparrows, banded in January and February, 1922, were again captured on December 9 and 18 last.

Summaries of Christmas censuses were read by Messrs. Marks (Arlington, N. J., Dec. 25, 13 species), R. Friedman and L. N. Nichols (Bronx, N. Y., Dec. 23, 32 species), Hix

(Bronx, N. Y., Dec. 24, 28 species), and Urner (Elizabeth, N. J., Dec. 24, 39 species, Dec. 26, 37 species). Among the birds Mr. Urner had seen this year, but not in his Christmas census of last year, were the Pine Siskin (*Spinus pinus*), Fox Sparrow, Savanna Sparrow (*Passerculus sandwichensis savanna*), Snow Bunting (*Plectrophenax n. nivalis*), Long-eared Owl (*Asio wilsonianus*) (1), Harriers (*Circus hudsonius*) (2, calling), and Ring-billed Gull (*Larus delawarensis*).

In Bronx Park Mr. Hix had seen a Catbird (*Dumetella carolinensis*) on Dec. 16; and Mr. Griscom reported that it had been observed as late as Dec. 24 by Mr. Pangburn, in the same place.

Mr. Griscom told of the Christmas census he and Mr. Boulton had made at Montauk, L. I., including 42 species, among them the Dovekie (*Alle alle*), Iceland Gull (*Larus leucop-terus*), Double-crested Cormorant (*Phalacrocorax a. auritus*), Ruddy Duck (*Erismatura jamaicensis*), Coot (*Fulica americana*), and Cedar Waxwing (*Bombycilla cedrorum*).

The general scarcity of Chickadees was discussed by Messrs. Bowdish, Griscom, Rogers, and Hix. The Black-capped Chickadee (*Penthestis a. atricapillus*) was agreed to be rare this winter in the vicinity of New York.

The talk by Mr. S. H. Chubb on Herring Gull (*Larus argentatus*) Colonies off the coast of Maine was illustrated with many colored lantern-slides, from photos made during his visit of a month, this past summer, to Matinicus and the neighboring islands. The weather had been unprecedentedly bad, rain fog, and high seas all combining to render trips to the bird colonies difficult.

On Matinicus Island, reached by motorboat from Rockland, Me., there is a community of 75 souls, fishermen and lobstermen. It is 2 miles long by one mile wide, but has no bird colonies. On the neighboring "No Man's Land" there used to be a gull colony, and the Audubon Society had paid a warden to protect them. This man, however, started a fox farm there, hoping that he might sell the island to the Society; in this he was disappointed, and the gulls meanwhile moved to

Ten-pound Island. There they now have approximately 2,000 nests.

In grassy parts of the islands there were Savanna Sparrows, and on a rocky cliff Mr. Chubb saw a Raven's (*Corvus corax principalis*) nest, already deserted in June, which measured at least 3 feet in diameter.

Matinicus Rock, a quarter of a mile in length, was occupied by Arctic Terns (*Sterna paradisæa*), which had fared badly this year because of the cold, wet weather. Many dead young, still in the down, were found scattered about; and Mr. Chubb saw only one alive, though a few other pairs had again laid eggs. There were also Black Guillemots (*Cephus grylle*), laying their eggs in the cracks of rocks, without any nesting material.

January 9, 1923.—Regular Meeting. The President in the chair.

In the absence of the Secretary the chair appointed Mr. Bowdish as secretary *pro tem*.

Two names proposed at the last meeting for membership, Mr. Charles A. Philhower, Supervising Principal of Public Schools of Westfield, N. J., and Mr. W. R. Boulton, Jr., Beaver, Pa., were favorably reported by the Membership Committee; and on motion, the Secretary cast the unanimous electing ballot of the meeting.

Mr. Pangburn reported four Lapland Longspurs (*Calcarius l. lapponicus*) and an Ipswich Sparrow (*Passerculus princeps*) at Long Beach, December 23; a Catbird (*Dumetella carolinensis*) in Bronx Park December 31, and a Towhee (*Pipilo e. erythrophthalmus*) at Gunhill Road January 7. Discussion followed regarding the northern status of the Kingfisher (*Ceryle alcyon*) in winter. Mr. Johnson stated his belief that enough open water to afford feeding opportunities was the one requisite. He cited a record in Northern Massachusetts in the week preceding New Year, with very little open water available; and Mr. John T. Nichols mentioned one seen from Harvard Bridge in the first week of January.

Mr. Howland gave a Christmas bird census taken by himself and Mr. Carter at "Wyanokie," N. J., December 30, 10:45 A.

M. to 4:15 P. M., showing 19 species and about 166 individuals.

Mr. Urner reported five Red Crossbills (*Loxia curvirostra minor*) from the Elizabeth region, January 7. Mr. Bowdish stated that Song Sparrow (*Melospiza m. melodia*) 14757 was banded at Demarest, N. J., July 29, 1922, and repeated December 17 and 30, which he cited as a nearly perfect record of a permanent resident. He also mentioned a Tree Sparrow (*Spizella m. monticola*) feeding in the trap on the morning of January 9, which was so interested that although the trap failed to work, it permitted close approach. Then becoming confused, it fluttered about the back of the trap instead of its open front, until it could be closed. As a result the bird was banded.

The paper of the evening was by Mr. Julius M. Johnson, entitled "Notes on Bermuda Birds." The paper was based on Mr. Johnson's personal experiences in the Bermudas in August, 1922, where he made his headquarters at the Harvard Marine Biological Laboratory. In introducing his subject, the speaker referred to the geographical, geological, topographical, and ethnological characteristics of the Bermudas, their probable volcanic origin and early history. Ten species of land birds were stated to comprise the resident bird life of the islands, as noted by the speaker. The White-eyed Vireo (*Vireo griseus bermudianus*) was considered as the most abundant and reported to remain and continue in full song through the winter. It frequented mostly the mangroves which lined the shores. The Bermuda Ground Dove (*Chæmepelia passerina bermudiana*) was ranked second in abundance and the Catbird third. The Crow (*Corvus b. brachyrhynchos*) was not abundant, owing to a sixty cent bounty which had resulted in almost exterminating it. The Quail or Bobwhite (*Colinus v. virginianus*), introduced, had been exterminated at one time and again introduced, but was not abundant. The Florida Gallinule (*Gallinula galeata*) was another bird which was classed as not abundant. Bluebirds (*Sialia s. sialis*) were fairly abundant and Mr. Johnson said

that any tendency to development of a geographical race was counteracted by annual new accessions from the mainland. The European Goldfinch (*Carduelis carduelis*) had been introduced and had developed a race which the speaker believed was recognized. The European House Sparrow (*Passer domesticus*) was abundant and efforts to reduce its numbers or exterminate it had proved as fruitless as similar efforts in this country. Eight hundred pounds sterling had been expended vainly in bounties. It was introduced from New York. A race of the Cardinal (*Cardinalis c. cardinalis*) was mentioned. The Belted Kingfisher occurred as a migrant visitant after the breeding season. The birds incurred local enmity because of their fondness for squid, which the fishermen use as bait. The Mockingbird (*Mimus p. polyglottos*) had been introduced but did not seem to thrive. A few were noted by Mr. Johnson.

The total list of Bermuda birds up to 1884 included 186, many being water birds with practically the status of stragglers. Such species as Golden (*Charadrius d. dominicus*) and Black-bellied Plovers (*Squatarola squatarola*) and Spotted Sandpiper (*Actitis macularia*) are of frequent occurrence. Many of our Warblers occur as migrants, including the Black-throated Blue (*Dendroica c. caerulescens*), Cape May (*Dendroica tigrina*), and Yellow Warblers (*Dendroica a. aestiva*).

Mr. Johnson referred to the Yellow-billed Tropic Bird (*Phaëthon americanus*) as one of the striking breeding birds of the Islands. A nest discovered by Mr. Johnson was at the back of a small cave, about two and one half feet in diameter. Crawling into this as far as he could, about the length of his body, he found the bird sitting very closely on its one egg, at the back of the cave, just out of arm's length. The birds are present about the Islands from about the first of April to the first of October. They nest twice in a season, soon after arrival and again in July or August, laying only a single egg. The nest sites are easily accessible to cats, which Mr. Johnson believes to be responsible for great destruction. The Red-

billed Tropic Bird (*Phaëthon æthereus*) also occurs in the Bermudas, but has not been found to breed. There are stories of a bird known as the Cahow, formerly occurring in great numbers, and which, serving as food in a desperate emergency, some two centuries ago averted wholesale starvation. This bird has been described as of a brownish-white plumage. Mr. Johnson referred to the finding by Mowbray of plumage of such character, partially imbedded in stalactite deposits, from which it was deduced that the mysterious bird, the Cahow, was close to the Petrels.

The President stated that Mowbray found feather and skeletal remains of three Petrels in the Bermudas, one fairly close to Audubon's Shearwater (*Puffinus lherminieri*), another to Manx Shearwater (*Puffinus puffinus*) and the third, believed to have been the Cahow, approaching the Scaled Petrel (*Æstrelata scalaris*).

January 23, 1923.—Regular Meeting. The President in the chair.

On motion by Mr. Marks, it was voted that the President be empowered to appoint a Dinner Committee to take charge of arrangements for the coming annual dinner of the Society.

Mr. Weber reported that he had seen two Night Herons (*Nycticorax nycticorax nævius*) which had been killed on January 12 at Merrick, Long Island, from a flock.

At Bronx Park, on January 20, Mr. Griscom had seen a flock of White-winged Crossbills (*Loxia leucoptera*), a few of them being present on the following day, as well.

A male Red-winged Blackbird (*Agelaius p. phæniceus*) and three Long-eared Owls (*Asio wilsonianus*) were observed by Mr. Marks at Arlington, N. J., on January 6.

Mr. L. N. Nichols told of seeing a number of Ring-billed Gulls (*Larus delawarensis*), January 21, on the Hudson River near 125th Street; and Mr. Boulton at Amityville, Long Island, had found Pine Grosbeaks (*Pinicola enucleator leucura*), a Cedar Waxwing (*Bombycilla cedrorum*) and Fox Sparrows (*Passerella i. iliaca*), on January 16.

Mr. Urner remarked that he had seen Bonaparte's Gulls (*Larus philadelphia*) on Newark Bay the day of the meeting,

and that this was his latest winter record for the species. Mr. J. T. Nichols agreed with him as to their wintering this year.

On January 19, Dr. Janvrin spent four hours at Long Beach without seeing a single duck of any kind, a most unusual experience for that locality. The pond near the eastern end of the boardwalk, he regretted, is being filled in; about it many bird records have been made by members of the Linnæan Society.

The Chair read some notes sent in by Mr. Pangburn, who had observed a male Hooded Merganser (*Lophodytes cucullatus*) and 3 Ruby-crowned Kinglets (*Regulus c. calendula*) at Kensico Reservoir on January 14, and a Catbird (*Dumetella carolinensis*) and a flock of about 15 White-winged Crossbills at Bronx Park on January 20. He also told of Mr. Frank Novak, at Fairfield, Conn., reporting two Catbirds and a Brown Thrasher (*Toxostoma rufum*) as wintering there.

Mr. J. T. Nichols had found a Brown Thrasher on January 15 at Garden City, L. I.

The Secretary read some notes contributed by Mr. Bowdish, from Demarest, N. J. A Junco (*Junco h. hyemalis*) (No. 50021), which he had banded on February 28, 1921, returned on January 15, 1923. Purple Finches (*Carpodacus p. purpureus*) had been taken in his trap on January 12 and a few times since, these being the first of their species to visit his feeding station. On January 21, one of Mr. Bowdish's neighbors brought him one of the Towhees (*Pipilo e. erythrophthalmus*) he had banded in December. It was in good condition, well fed, and from a little blood found beneath the skin of the head, was thought to have met death by flying into an obstacle during a storm. Miss Florence Bunce had reported to Mr. Bowdish that a Hermit Thrush (*Hylocichla guttata pallasi*) was seen at Ridgewood, N. J., on January 12.

In commenting upon the return of Mr. Bowdish's Junco, the Chair compared a Montclair record by Mr. Howland, which offered a close parallel in dates, though the localities are far apart. Mr. Crosby suggested that the coincidence might be determined by weather, as heavy snow encourages birds

like the Junco and Tree Sparrow (*Spizella m. monticola*) to come to feeding stations and traps.

The paper of the evening was by Mr. W. R. Boulton, Jr., on "Avifaunal Comparisons of Cold Spring Harbor (L. I.) and Beaver, Pa." At Cold Spring Harbor the speaker had spent the past summer, and Beaver was his home. The latitude of the two places was nearly the same, but in one case the climate was maritime, in the other inland, and the mean annual temperature was one or two degrees higher at Beaver. Mr. Boulton considered especially the presence or absence of certain birds and the ecological conditions which seemed to be responsible.

Geological conditions and vegetation were contrasted for the two regions, and their local subdivisions were listed. It was shown that some of the ecological niches or plant associations were common to both, whereas others were restricted to one or the other locality, as shown by the following tabulation:

COLD SPRING HARBOR

1. Salt Bay
2. Sand Beach
3. Salt Marsh and Mud Flats
4. Pine Woods
5. Fresh Water Lakes
6. Fresh Water Marsh
7. Deciduous Woods
8. Scrubby Pastures

BEAVER

1. Fresh Water Marsh
2. Deciduous Woods
3. Scrubby Pastures
4. Precipitous Streams
5. River
6. Hemlock Groves
7. High Upland Pasture

The birds characteristic of the beaches, salt bay, and salt marshes at Cold Spring Harbor were shown to be largely absent from Beaver, where even the fresh water marsh birds were only represented by the Red-winged Blackbird. At Cold Spring Harbor the deciduous woods have few characteristic birds, though one might list as such the Acadian Flycatcher (*Empidonax virescens*), Great Crested Flycatcher (*Myiarchus crinitus*), Purple Finch, and Blue Jay (*Cyanocitta c. cristata*), Brown Thrashers and Catbirds being found

around their edges. At Beaver, the deciduous woods are the richest in birds, all of them harboring Cerulean Warblers (*Dendroica cerulea*). Hooded Warblers (*Wilsonia citrina*) are found especially about the bluffs on the south side of the Ohio River. The Kentucky Warbler (*Oporornis formosus*) is abundant near Beaver. The Blue Jay however is distinctly rare.

Such differences can scarcely be explained by an appeal to life zones. Questions of distribution are better approached through environmental factors than through isotherms or other peculiarities of temperature. At Beaver Cardinals (*Cardinalis c. cardinalis*) are common, a walk of only a few miles will reveal 15 or 20 of them. Tufted Titmice (*Bæolophus bicolor*) are common, and likewise Blue-Gray Gnatcatchers (*Polioptila c. cærulea*), the latter especially among white oaks or beeches. These are all rare at Cold Spring Harbor, though it lies, we are told, in the same life zone. Ruffed Grouse (*Bonasa u. umbellus*) are common at Beaver, the Red-bellied Woodpecker (*Centurus carolinus*) less so; and Bewick's Wren (*Thryomanes b. bewicki*) becomes commoner at a little distance from Beaver, both toward the east and the west, as a result of its environmental requirements.

The bird fauna of scrubby pastures is not the same at the two localities. At Cold Spring Harbor the Chestnut-sided Warbler (*Dendroica pennsylvanica*) and the White-eyed Vireo (*Vireo g. griseus*) nest in them, but neither of these breeds at Beaver. The Blue-winged Warbler (*Vermivora pinus*), common at Cold Spring Harbor, is exceptionally rare at Beaver, where the Golden-winged Warbler (*Vermivora chrysoptera*) replaces it. The latter is more fond of hilly places.

Due to its fondness for precipitous streams, the Louisiana Water-Thrush (*Seiurus motacilla*) is very common at Beaver, though rare at Cold Spring Harbor. The Ohio River has a few wandering gulls at times, and not many ducks, the only resident heron being the Little Green (*Butorides v. virescens*). The Coot (*Fulica americana*) is more common than ducks.

At Beaver the hemlock groves always harbor Worm-eating Warblers (*Helmitheros vermivorus*), and the Tufted Titmouse also frequents them. Prairie Horned Larks (*Otocoris alpestris praticola*) seek the high upland pastures, near Beaver, and both the Field (*Spizella p. pusilla*) and Vesper Sparrows (*Poæcetes g. gramineus*) live in them, as well as in the lower scrubby pastures.

Subsequent discussion by Mr. Griscom and other members brought out the difficulty in explaining faunal differences even by appealing to ecological conditions. They will not entirely clear up the reasons for the varying status in the two regions of the Blue Jay, Acadian Flycatcher, Black-throated Green Warbler (*Dendroica virens*), Prairie Warbler (*Dendroica discolor*), Purple Finch, Chestnut-sided Warbler, and White-eyed Vireo.

The insufficiency of the life zone idea was pointed out by Mr. Griscom. Why do some Carolinian birds go farther north at Beaver, others farther on Long Island? It is partly a question of range. Some species like the Red-bellied Woodpecker are of more western distribution, others such as the Prairie Warbler inhabit the coastal plain. Breeding ranges are only expanded gradually, and their borders are not apt to coincide for many species.

Mr. J. T. Nichols discussed the occurrence and abundance on Long Island of the Field Sparrow, Vesper Sparrow, Yellow-breasted Chat (*Icteria v. virens*), and Warbling Vireo (*Vireosylva g. gilva*).

February 13, 1923.—Regular Meeting. The President in the chair.

The Membership Committee reported favorably on the names proposed at the last meeting, and the Secretary was instructed to cast one ballot for Mrs. Caril Tucker and Mrs. Francis Garvan, who were then declared elected members of the Society.

The Chair announced the appointment of the following members as members of the Dinner Committee: Dr. Dwight, Mr. Pearson, Mr. Griscom.

Mr. Pangburn stated that there was still a Catbird (*Dumetella carolinensis*) in Bronx Park on Feb. 11 and 12.

Mr. L. N. Nichols had observed a flock of 12 Redpolls (*Acanthis l. linaria*) in Bronx Park on Jan. 29, and a Red-breasted Nuthatch (*Sitta canadensis*) at Pelham Bay Park, Feb. 5.

From Englewood, on Feb. 4, Mr. Griscom reported 2 Barred Owls (*Strix v. varia*), 1 Long-eared Owl (*Asio wilsonianus*), 1 Saw-whet Owl (*Cryptoglaux a. acadica*), 2 White-winged Crossbills (*Loxia leucoptera*), 40 Redpolls.

Redpolls were seen at Leonia, N. J., by Mr. Weber during the last two weeks of January, and a Carolina Wren (*Thryothorus l. ludovicianus*) at the same time.

Mr. Griscom said that Mr. R. D. Moffat told him of having a pair of Evening Grosbeaks (*Hesperiphona v. vespertina*) visit his feeding station, near Ridgewood, N. J., on Feb. 12.

Mr. J. T. Nichols, in company with Messrs. Boulton and Griscom, had visited Amityville, Long Island, on Jan. 27, where they had seen 2 or 3 Bald Eagles (*Haliaeetus l. leucocephalus*), 3 Long-eared Owls, a Night Heron (*Nycticorax nycticorax naevius*), 3 Fox Sparrows (*Passerella i. iliaca*), some 10 Savannah Sparrows (*Passerculus sandwichensis savanna*), and a Brown Thrasher. On Feb. 12, with Mr. Griscom, he had gone from Amityville to Babylon, and they had noted 3 Mourning Doves (*Zenaidura macroura carolinensis*), a Savannah Sparrow, and upward of 11 Vesper Sparrows (*Poæcetes g. gramineus*), along roadside and railway track. 5 of the last-named being the largest number in any one place.

Mr. Griscom gave the special paper of the evening, which dealt with the birds of the coastal prairies of southeastern Texas. This extreme corner of the United States, along the lower Rio Grande, is the richest spot for birds in our whole country. Brownsville lies in the same latitude as Key West, and has a considerable number of tropical and subtropical species, as well as many migrants from the north. Jacanas (*Jacana spinosa*), for instance, occur casually on the lower Rio Grande, but nowhere else in the United States. The

Chachalaca (*Ortalis vetula mcalli*) is a representative of a Neotropical family of game-birds. The Green Jay (*Xanthoura luxuosa glaucescens*), which seems so strangely colored to northern eyes, the Mexican Grebe (*Colymbus dominicus brachypterus*), the Mexican Cormorant (*Phalacrocorax vigua mexicanus*), the Black-bellied Tree Duck (*Dendrocygna autumnalis*), the Red-billed Widgeon (*Columbia flavirostris*) (with a bill which is really yellow), the White-fronted Ground Dove (*Leptotila fulviventris brachyptera*), Groove-billed Ani (*Crotophaga sulcirostris*), Texas Kingfisher (*Ceryle americana septentrionalis*), Parauque, Vermilion Flycatcher (*Pyrocephalus rubinus mexicanus*), Audubon's Oriole (*Icterus melanocephalus audaboni*), Sharpe's Seed-Eater (*Sporophila moreletii sharpei*), and Texas Sparrow (*Arremonops*) are among the other tropical birds found there.

From the lower Rio Grande have been reported about 350 species of birds. It is in the winter that the avifauna there is most varied, for approximately 210 species are to be found in any winter month, the largest winter list that could be cited for any place in the United States.

During their recent trip to the district, Messrs. Griscom and Crosby observed 146 species in 12 days, a record which could not be equalled in Florida.

Southeastern Texas is still relatively wild, the land being owned in large blocks; and ducks are abundant along the railway tracks. Even a flock of Wild Turkeys (*Meleagris gallopavo intermedia*) and a Coyote (*Canis latrans*) were seen from the train. Mr. Pearson has already described the breeding colonies of herons and terns.

Mr. Griscom took up in turn the ecological subdivisions of the region, beginning at Brownsville. First, there are coastal plains inhabited by Meadowlarks (*Sturnella*), Sprague's Pipit (*Anthus spraguei*), and Long-billed Curlew (*Numenius americanus*). Further east came the lagoons, increasing in salinity to the Laguan Madre. Terns (*Sterna*), Laughing Gulls (*Larus atricilla*), White (*Pelecanus erythrorhynchos*) and Brown Pelicans (*Pelecanus occidentalis*), several kinds of

Hérons, and the Vermilion Flycatcher, were met with hereabouts. Then there is the scrub country further inland, with no large trees, but thorn scrub that is extremely difficult to traverse, yet full of birds particularly about the "resacas" or remnants of former courses of the Rio Grande, many containing water, and surrounded with more abundant scrub. Here dwell the Chachalacas, and in nearby cactus-grown spots are the Road-runner (*Geococcyx californianus*), Cactus Wren (*Heleodytes brunneicapillus couesi*), and Verdin (*Auriparus f. flaviceps*).

A single Solitary Sandpiper (*Helodromas s. solitarius*) observed by Messrs. Griscom and Crosby constitutes the first winter record of any locality in the United States.

On the more northern prairies of the region, the Killdeer (*Oxyechus vociferus*) is extremely abundant. The ducks vary in number with the amount of rain that falls, for shallow ponds are formed, which literally fill with ducks. In one such body of water, Messrs. Griscom and Crosby noted every species of North American fresh-water duck except the Wood Duck (*Aix sponsa*) and the Black Duck (*Anas rubripes*).

Hawks were abundant, and among them many Western Ferruginous Roughlegs (*Archibuteo ferrugineus*), alighting customarily on the ground. Among the geese, the most abundant is the Snow Goose (*Chen h. hyperboreus*), a very conspicuous bird. White-fronted Geese (*Anser albifrons gambeli*) are also common, as are the Canada (*Branta c. canadensis*) and Hutchins' Geese (*Branta canadensis hutchinsi*). The Blue Goose (*Chen caerulescens*) is less so, and associates with the Snow Goose.

Sandhill Cranes (*Grus mexicana*) are now more numerous in winter in southern Texas than anywhere else in North America. In the "shin oak" prairies they are common, eating the fruit of the small trees, which is not an acorn. The Whooping Crane (*Grus americana*), now on the verge of extinction, is a typical prairie species, which used once to migrate down the eastern coast of the States. There may not be one hundred Whooping Cranes still alive. Mr. Pearson

recently found a few wintering at Laguna Laga in southern Texas, where not more than 9 are to be found together, and Canadian ornithologists found two nests last year in Saskatchewan. Messrs. Griscom and Crosby were fortunate in seeing four whooping cranes, and remarked on the pure white color of birds on the ground, the wing tips being entirely covered.

February 27, 1923.—Regular Meeting. The President in the chair.

The dinner committee reported that the annual dinner would be held in the Mitla Restaurant at the American Museum. Methods of early announcement of the dinner were discussed by Messrs. Griscom and Janvrin and on motion by Mr. L. N. Nichols it was voted that the committee be empowered to continue its activities.

Messrs. Crosby and Griscom at Rhinebeck, N. Y., on February 25, saw 1 Saw-whet Owl (*Cryptoglaux a. acadica*) and found the feathers of a Long-eared Owl (*Asio wilsonianus*) which had probably been the victim of a Barred Owl (*Strix v. varia*).

Mr. Pangburn saw a flock of Redpolls (*Acanthis l. linaria*) in Bronx Park on February 22d; and 1 Hermit Thrush (*Hylocichla guttata pallasi*) was seen there by Mr. R. S. Williams. The Catbird (*Dumetella carolinensis*) which had frequented the vicinity earlier in the winter seemed to have disappeared. Mr. Pangburn further remarked that Crossbills (*Loxia curvirostra minor*) had not been seen in Bronx Park for several weeks when on Feb. 22 a Hawk was seen to drop the front of a Crossbill head, showing the unmistakable shape of the mandible.

The occurrence of the Duck Hawk (*Falco peregrinus anatum*) among the high buildings on lower Manhattan Island was discussed by Messrs. Pangburn, Hix, and Chapin. They seemed to be more common in winter and are not positively known to nest there.

The Secretary read a message from Mr. Bowdish by whom Purple Finch (*Carpodacus p. purpureus*) No. 66137,

banded by Frank J. Novak, at Fairfield, Ct., on Jan. 22, 1923, was retaken at Demarest, N. J., on Feb. 12 among large numbers of Purple Finches, daily visiting and revisiting the traps.

A Razor-billed Auk (*Alca torda*) recently brought to the American Museum by Dr. Frank Overton was shot in early February offshore to the south of Great South Bay, L. I.

The stated program of the evening was a discussion by Dr. Jonathan Dwight of the "Plumages, Molts, Pattern, and Variations in the Kittiwakes (*Rissa tridactyla* and *Rissa brevirostris*)."
Rissa tridactyla exhibits a very simple sequence of molts. Among the gulls the great majority of downy young are spotted, but the Kittiwake and the Ivory Gull (*Pagophila alba*) have young devoid of markings. The series of specimens in the American Museum shows very adequately the gradual progress of the plumages. After the down the juvenal plumage comes gradually, but instead of differing from the first winter plumage as is usual in the Laridæ it is very similar. They might indeed be mistaken for one and the same plumage were the growing feathers not found which prove that there is a post-juvenal molt. Dr. Dwight knew of no other gull in which these two plumages were so precisely similar. In all gulls the first set of remiges and rectrices is kept for a year, so the post-juvenal molt is only partial.

Dr. Dwight discussed the entire range of plumages of the Kittiwakes, illustrating his remarks with specimens from his remarkable series of this family.

March 13, 1923.—Annual Meeting. The Annual Dinner of the Society was held in the Mitla Restaurant of the American Museum, at 7:15 P.M. 34 members and 19 guests were present.

At 9:10 P.M. the Annual Meeting was called to order, with the President in the chair.

36 members and 26 guests and visitors were present.

The minutes of the preceding meeting were read and approved.

The Secretary read his Annual Report, as follows:

During the past year the Linnæan Society has had 16 meetings at which the total attendance was 483. The Tenth Annual Dinner was attended by 37 members and guests, and 27 members were present at the Annual Meeting on the same evening. At the 15 other meetings during the year the total attendance averaged 32.2, that of members 17.9—a slight increase over the previous year. The largest number present at one meeting was 60, on November 28, when Dr. Chapman spoke on “A Summer in Ecuador.” 22 were members; the smallest attendance was that of the meeting of October 10, with 14 members and 2 visitors.

3 resident members have resigned, and 9 have been dropped for non-payment of dues, many of them having removed their residence from the neighborhood of New York City. 13 new resident members have been elected; so that the membership now stands: resident, 98; corresponding, 24; honorary, 3; total, 125.

14 papers have been presented before the Society—9 on ornithology, 2 on the work of zoölogical expeditions, 1 on adaptations between insects and flowers, 1 on herpetology, and 1 on faunal zones in the region of New York. 2 evenings were devoted entirely to field observations.

In view of the expense of printing, the Society has not published its Abstract of Proceedings since March, 1920. It is now planned to issue the Abstract for the three years elapsed, together with a paper by Mr. T. Gilbert Pearson on “The Winter Birds of Southern Texas.”

JAMES P. CHAPIN,
Secretary.

The Secretary also read the Annual Report of the Treasurer, who could not be present. There was a Balance on Hand, March 5, 1923, of \$3,074.28. The Auditing Committee, already appointed by the chair, consisting of Dr. Dwight and Mr. Griscom, reported that it had examined the accounts of the Treasurer and found them correct. The Report of the Treasurer was thereupon accepted by the Society.

The next order of business was the annual election of officers. The Vice-President took the chair. The name of Mr. J. T. Nichols, being the only one proposed for President, he was unanimously re-elected, and resumed the chair.

For Vice-President the nominations were:

J. P. Chapin (proposed by Mr. Griscom),
Ludlow Griscom (proposed by Mr. Crosby).

Mr. Griscom withdrew his nomination and Mr. Chapin was elected to be Vice-President.

For Secretary the nominations included: .

Mr. Pangburn (proposed by Mr. Howland),
 Mr. Howland (proposed by Mr. Griscom),
 Mr. Breder (proposed by Mr. Marks),
 Mr. Carter (proposed by Mr. Janvrin),
 Mr. Crosby (proposed by Mr. Carter).

Several of the nominees gave reasons wherefore it would be difficult for them to serve, and in the balloting which followed Mr. Carter was elected Secretary.

There was but a single nomination for Treasurer, and Mr. T. Gilbert Pearson was reelected.

The Membership Committee, having reported favorably the name of Miss Naomi Howells, 113 W. 76th Street, New York City, she was elected an active member of the Society.

The presentation of records and observations was omitted, so the announced program could be taken up. Mr. Edward Chance's film, "The Cuckoo's Secret," was to be shown for the first time in America, and the Secretary wished to make some prefatory remarks, illustrated by lantern-slides, and explain the peculiar interest of the film as well as the manner of its preparation.

The Cuckoo of Europe was famous, of course, for its parasitic egg-laying; while many other members of its family, especially in the Old World, share this habit. Although both the Yellow-billed (*Coccyzus americanus*) and Black-billed Cuckoos (*C. erythrophthalmus*) of the eastern United States construct their own nests, the eggs or young of one species of our Cuckoos are occasionally found in the nest of the other. The young can be distinguished by the color of the hair-like downs, or "trichoptiles," which precede the juvenal feathers.

This unusual type of down is found still better developed in the nestlings of the Old World Coucals, but it is lacking in the parasitic Cuculinæ, which form the majority of the Old World Cuckoos. In Africa, Mr. Chapin had studied cuckoos of the genera represented in Europe, *Cuculus* and *Clamator*, as well

as the Golden Cuckoos *Chrysococcyx*, the Coucals *Centropus*, and others of their relatives. *Chrysococcyx caprius*, for example, lays its eggs commonly in the swinging nests of Weavers, entering only from below.

The methods were explained by which Mr. Chance, working in England with Cuckoos which nearly always laid their eggs in Meadow Pipit's (*Anthus pratensis*) nests, discovered that successive layings by the same bird took place at intervals of approximately 48 hours. The eggs of the same Cuckoo were uniform enough in color and pattern to be easily recognizable. One female Cuckoo was known to dominate the area in which Mr. Chance specialized. Thus, because she layed only in Pipit's nests with incomplete or unincubated sets, it was possible, after three years observation, to predict in what Pipit's nest, and on which afternoon, she would lay.

In this manner Mr. Chance and his cinema operator were able to post themselves in "blinds" near the Meadow Pipits' nests, and to take the pictures. In these pictures the female Cuckoo was seen to come flying, and then to hop about the low vegetation searching for the Pipit's nest. As she sat upon the nest, laying, she was largely hidden; but when she flew up she carried off in her beak one of the Pipit's eggs, taken as she first approached the nest. To illustrate this point slides were shown from more recent photos by Mr. Chance.

Perhaps the most striking scene in the film was that where the newly hatched Cuckoo pushes the two young Pipits up and over the rim of the nest, to die outside. Later pictures of the young Cuckoo, almost ready to fly, show how it is still fed by its diminutive fosterers, who alight on its back to offer food.

Mr. Chance's remarkable film is well entitled "The Cuckoo's Secret"; but now the secret is out, and it seems certain that these discoveries as to the ways of "Meadow Pipit" Cuckoos apply equally to the Cuckoos laying in the nests of other species of birds. The theory that the Cuckoo carries her own egg in her mouth or her throat is altogether abandoned by Mr. Chance, and with good reason.

March 27, 1923.—The meeting was called to order at 8:30 P.M., with the President in the Chair.

Nineteen members and nineteen visitors were present.

The minutes of the preceding meeting were read and approved.

A communication from the New England Bird Banding Association was read and referred to the Bird-Banding Committee.

The President appointed the following Committees:

Membership: Dr. Dwight, Messrs. Pearson and L. N. Nichols.

Entertainment: Mr. Lang, Dr. Fisher and Mr. Carter.

Publishing: Mr. Pangburn, Dr. Janvrin and Mr. Carter.

Bird Banding: Messrs. Howland, Bowdish and Crosby.

Mr. Bowdish reported that more than 400 bands had been placed on Purple Finches (*Carpodacus p. purpureus*) since January 12, 1923: No. 12879, banded Jan. 12, repeated as late as Mar. 15. Song Sparrow (*Melospiza m. melodia*) No. 50045, banded July 13, 1921, was retaken Mar. 6, 1923; Song Sparrow No. 14771, banded as a juvenile Aug. 22, 1922, was retaken Mar. 25, 1923; Purple Finch No. 66146, banded by Mr. Frank J. Novak, Fairfield, Conn., on Jan. 22, 1923, was taken at Demarest, N. Y., Mar. 12, 1923. This is the second of Mr. Novak's birds to be taken by Mr. Bowdish. A Sparrow Hawk (*Falco s. sparverius*) commenced raiding the traps and was captured, banded, and kept for a day or two and released; it again returned and was again trapped, kept for two weeks and released, wearing band No. 217616. A Goldfinch (*Astragalinus t. tristis*) No. 46516 trapped and banded Feb. 23, repeated Feb. 25.

First Fox Sparrow (*Passerella i. iliaca*) (4) noted Mar. 3. Birds trapped and banded Mar. 5, 8, and 11.

Mr. Urner reported for the Elizabeth, New Jersey region a Black-backed Gull (*Larus marinus*) on Mar. 5, which is a new record for the region. Nine Long-eared Owls (*Asio wilsonianus*) were observed on Mar. 4, ten on Mar. 11, and seven on Mar. 18.

The paper of the evening, by Mr. Clifford H. Pangburn, was entitled "A Few Days in Porto Rico."

Few people appear to realize that Porto Rico is in reality a part of the United States. This island, though only four days from New York, is truly tropical. It is about 100 miles long and 40 miles wide. A narrow coastal plain extends around the island. In this plain conical limestone hills, rising to sharp points, are frequent. The highest point on the island is El Yunque, 5,500 ft. above sea-level. The northeast trade winds are the prevailing winds, and in the northeast section of the island there is a yearly rainfall of 135 inches. In the southeast there is very little rain, and irrigation is carried on.

On the entire island the native population is about 1,500,000, and in addition to this there are 20,000 coming from the United States. San Juan is the largest city, with 60,000 inhabitants. Most of the natives are poor—a foreman receiving about \$9.50 per week and a laborer \$8.00 per week. Although birds are often shot, the poverty of the natives saves many, since they cannot afford to buy ammunition.

There are only about 160 species and subspecies of birds occurring on the island, but it makes up in numbers what it lacks in variety. In the fifteen days' visit to the island Mr. Pangburn saw 52 species of birds; his best day was 27 species.

One of the most common birds appeared to be the Porto Rican Honey Creeper (*Cæreba portoricensis*). This bird commonly enters a house to feed from a dish containing sugar and water which is placed on a table for the purpose of attracting it. The Porto Rican Oriole (*Icterus portoricensis*) is another common bird. The thrush family is represented by the Porto Rican Thrush (*Mimocichla ardosicea portoricensis*), a slatish bird with a coral red bill.

Four Flycatchers were observed,—among them the Gray Kingbird (*Tyrannus dominicensis*), the Porto Rican Petchary (*Tolmarchus taylori*), and the smaller Antillean Elainea (*Elainea m. martinica*); three Hummingbirds, one of which is very minute; the Porto Rican Blackbird (*Holoquiscalus brachypterus*), in size between a Grackle (*Quiscalus q.*

quisculus) and a Rusty Blackbird (*Euphagus carolinus*). This bird is noisy and is generally found around the Palm trees. Around Ponce the Yellow-shouldered Blackbird (*Agelaius xanthomus*) was common. Two small Finches, or Grassquits, were noted, and three doves—the small Ground Dove (*Chæmepelia passerina trochila*), the Zenida Dove (*Zenaida zenaida lucida*), and the White-crowned Pigeon (*Columba leucocephala*). The Ani (*Crotophaga ani*), a bird related to the cuckoos, was found in the pastures with the cattle.

The Porto Rican Spindalis (*Spindalis portoricensis*) and the Porto Rican Grosbeak (*Loxigilla portoricensis*) were both noted. There is but one woodpecker found in Porto Rico, the Porto Rican Woodpecker (*Melanerpes portoricensis*), an attractive bird with a rosy breast.

There are several owls found on the island, but the only one seen was the Bare-legged Owl (*Gymnasio nudipes*), which was a fairly common bird. Its call is similar to our Screech Owl (*Otus a. asio*). The Jamaican Vireo (*Vireosylva c. calidris*) was also noted. On the island itself sea birds were scarce. The birds appeared to be away breeding on some of the smaller outlying islands. The Bridled Tern (*Sterna anætheta*) was found to be common south of Porto Rico, however.

While on shipboard Mr. Pangburn observed a Booby (*Sula leucogastra*) that had alighted on the canvas cover of a life-boat on the deck. It allowed a near approach before it flew away.

The Porto Rican Parrot (*Amazona vittata*) is rapidly approaching extinction, although still found in small numbers on the slopes of El Yunque. Mr. Pangburn was anxious to see the small Porto Rican Tody (*Todus mexicanus*), but he was unsuccessful, although it is claimed to be a fairly common bird. Mockingbirds (*Mimus polyglottos orpheus*), Yellow-crowned Night Herons (*Nyctanassa violacea*), Egrets (*Herodias egretta*) and Brown Pelicans (*Pelecanus occidentalis*) were observed. The pelican of Porto Rico appears

to lack the habit of the Florida birds in that it does not toss the fish into the air preparatory to swallowing it.

Among the migrants noted were the Redstart (*Setophaga ruticilla*) and Ovenbird (*Seiurus aurocapillus*).

Originally there appeared to be no large mammals on the island. The common rat (*Epimys norvegicus*) soon introduced itself and became a scourge. The Mongoos (*Herpestes birmanicus*) was introduced and although killing some rats lives on poultry and birds as well. The Turkey Vulture (*Cathartes aura septentrionalis*) has also been introduced but does not seem to be increasing.

Mr. Bowdish remarked that he had visited the island twenty years ago and had then found the Honey Creeper, Grassquits and Ground Doves common, as well as the wood rats (*Epimys rattus alexandrinus*).

The meeting adjourned at 10:11 P.M.

April 10, 1923.—The meeting was called to order at 8:15 P.M., with the President in the Chair.

Seventeen members and four visitors were present.

The minutes of the preceding meeting were read and approved, as corrected.

The Membership Committee reported favorably on the names of Mr. Irving K. Taylor, 33 West 67th St., New York City, and Mr. Allen Frost, in care of Trussell Mfg. Co., Poughkeepsie, N. Y., and they were elected active members of the Society.

Mr. Howland, in giving the Report of the Bird-Banding Committee, thought it a good plan to have the Minutes and other business at the next meeting dispensed with. He also stated that the Committee had a bill of a little over \$90.00. He suggested that it be paid for by individual subscription. Mr. Griscom made the motion "That the Society reimburse the Bird-Banding Committee for its expenditures to date, and that further policy be left to the judgment of the Committee." This motion was seconded by Mr. L. N. Nichols and was passed unanimously.

Mr. Hix reported for Overpeck Creek region, 12 Green-

winged Teal (*Nettion carolinense*), 15 Golden-eye (*Clangula clangula americana*), and one Bald Eagle (*Haliaeetus l. leucocephalus*) on Mar 31st.

Mr. Bowdish, at Demarest, reported Song Sparrow (*Melospiza m. melodia*) No. 14779, banded Sept. 2, 1922, retaken April 8, 1923.

Mr. Crosby reported for Dutchess County, N. Y., Mar. 29, Saw-whet Owl (*Cryptoglaux a. acadica*); April 6, Ring-billed Gull (*Larus delawarensis*); April 7, Green-winged Teal; April 9, a total of 53 species, including 11 species of ducks, the more important of which were Hooded Merganser (*Lophodytes cucullatus*), one female, Baldpate (*Mareca americana*) 3, Green-winged Teal 3, Shoveller (*Spatula clypeata*) one male, Ring-necked Duck (*Marila collaris*), one male, Bufflehead (*Charitonetta albeola*), one female; also Tree Swallow (*Iridoprocne bicolor*) and Yellow Palm Warbler (*Dendroica palmarum hypochrysea*).

Mr. Griscom reported from the Overpeck Creek, Englewood, N. J., on March 25, with Mr. J. M. Johnson, 9 species of ducks, including 3 Baldpate and a pair of Ring-necked Ducks; April 8, seven species of ducks, including 8 Baldpate and 4 Green-winged Teal, with Mr. J. M. Johnson and Mr. C. H. Pangburn.

On April 7, Mr. Pangburn saw 16 Baldpate and 1 Bittern (*Botaurus lentiginosus*) (earliest date).

Mr. J. T. Nichols reported a Little Blue Heron (*Florida cærulea*), adult, Mastic, Long Island, on April 7.

The paper of the evening was by Mr. Charles A. Urner, and entitled "Field Notes from Elizabeth, New Jersey."

By the use of a map Mr. Urner showed this interesting section of country, which is ideal for the bird lover. The region, which extends from Newark Bay to the Orange Mountains, contains both upland and lowland. On the east is the Great Salt Marsh, originally five miles long and about three miles wide, while westward the land gradually rises until it reaches the Orange Mountains. This diversity of environment is favorable for a large variety of birds, and over 230 species have been recorded from this section.

At the present time the marsh is undergoing a change, as it is being drained to a considerable extent. The ground is drying, the vegetation changing, this in turn affecting the birds.

Migrating birds appear to follow a fixed route over this section, and Mr. Urner has observed that every spring this identical course is taken. He observed at one time Crows (*Corvus b. brachyrhynchos*), lost in a fog, appeared to be scattered, but as soon as the fog lifted they immediately returned to the accustomed route. At another time during the migration, a flock of Red-winged Blackbirds (*Agelaius p. phæniceus*) was seen flying in a southerly direction over the marsh. Mr. Urner thought possibly the birds were retracing the general route by which they originally entered the region from a former nesting site further north. A large tree in which Grackles (*Quiscalus q. quiscula*) had nested for years was cut down. The second year after, during the migration, some of the grackles returned to the spot.

Mr. Urner compared this locality with other places he had visited with regard to the density of the bird population. Having spent two weeks at Green Pond, N. J., and noting 54 species, he returned home and the next day accounted for 76 species in this region. The reasons for so many birds in this territory are diversity of the locality, birds being crowded out of the cities to the outlying districts, and concentration in migration on remaining favorable areas.

Mr. Urner also showed a chart on which he had figured the numbers of the various families as seen per field hour. On the uplands sparrows predominated; the blackbirds were second on the salt marsh.

Pied-billed Grebe (*Podilymbus podiceps*), formerly bred, now rare.

Gulls—6 species, Herring (*Larus argentatus*), tending to increase, Ring-billed (*Larus delawarensis*) Laughing (*Larus atricilla*), Bonaparte (*Larus philadelphia*), Iceland (*Larus leucopterus*) and Great Black-backed (*Larus marinus*). Bonaparte Gull dates in 1922, Jan. 20, 50 seen, Jan. 27, 40 seen, Feb. 17, 35 seen, Feb. 18, 3 seen, Mar. 3, 18 seen.

Terns—Common (*Sterna hirundo*) and Black (*Hydrochelidon nigra surinamensis*), increasing. Petrel (*Oceanites oceanicus*), one instance.

Wood-Duck (*Aix sponsa*) decreasing; on Sept. 30, 1916, 50, and but one or two pairs this year. Increase in Black (*Anas rubripes*), decrease in Blue-winged Teal (*Querquedula discors*); increase in Pintail (*Dafila acuta*) in spring, rare in fall; no Ring-neck, Scoter or Canvasback (*Marila valisineria*); one Redhead (*Marila americana*); one Lesser Snow Goose (*Chen. h. hyperboreus*) shot.

Hérons—Breeding records of Bittern (*Botaurus lentiginosus*), Least Bittern (*Ixobrychus exilis*), Little Green Heron (*Butorides v. virescens*), Black-crowned Night Heron (*Nycticorax nycticorax nævius*). Migrants seen, Great Blue (*Ardea h. herodias*), Little Blue (*Florida cærulea*), American Egret (*Herodias egretta*), Yellow-crowned Night Heron (*Nyctanassa violacea*). The Herons are barely holding their own.

Rails—Virginia (*Rallus virginianus*) and Clapper (*Rallus c. crepitans*), both bred. The migrants are the King (*Rallus elegans*), Yellow (*Coturnicops noveboracensis*) (one old record) and Sora (*Porzana carolina*). They are all decreasing. The Coot (*Fulica americana*) was never common, but the Florida Gallinule (*Gallinula galeata*) formerly was common, now rare.

Phalarope—The Northern Phalarope (*Lobipes lobatus*) was formerly not uncommon—no recent records, however.

Shore birds—The breeding snipe and sandpipers are the following: Woodcock (*Philohela minor*) and Spotted Sandpiper (*Actitis macularia*). The migrants—Wilson's Snipe (*Gallinago delicata*), now rare, decreasing; Dowitcher (*Macingly abundant*); Sanderling (*Calidris leucophæa*), rare; Pectoral (*Pisobia maculata*), rare, Least (*Pisobia minutilla*), decreasing; Red-backed (*Pelidna alpina sakhalina*), irregularly common; Semipalmated (*Ereunetes pusillus*), increasingly abundant; Sanderling (*Calidris leucophæa*), rare; Greater Yellowlegs (*Totanus melanoleucus*), increasing in spring, rare in fall; Lesser Yellowlegs (*Totanus flavipes*), rare

in spring, irregular in fall; Solitary (*Helodromas s. solitarius*), common; Willet (*Catoptrophorus s. semipalmatus*), rare; Upland Plover (*Bartramia longicauda*), a few.

Plover—Breeding, Killdeer (*Oxyechus vociferus*), no marked change. Migrants—Black-bellied (*Squatarola squatarola*), never common; Golden (*Charadrius d. dominicus*), decreasing; Semipalmated (*Ægialitis semipalmata*), increasing.

Grouse (*Bonasa u. umbellus*) and Quail (*Colinus v. virginianus*), almost gone; Pheasants, well established.

Mourning Doves (*Zenaidura macroura carolinensis*), increasing.

Birds of prey—Turkey Vulture (*Cathartes aura septentrionalis*), rare; Hawks—Breeders, Marsh (*Circus hudsonius*), Red-shouldered (*Buteo l. lineatus*), Sparrow (*Falco sparverius*), Sharp-shinned (*Accipiter velox*) (?). Migrants—Rough-legged (*Archibuteo lagopus sancti-johannis*), Fish (*Pandion haliaëtus carolinensis*), Cooper (*Accipiter cooperi*), Pigeon (*Falco c. columbarius*) and Duck Hawk (*Falco peregrinus anatum*), latter only on meadows. Barn Owl (*Aluco pratincola*), rare; Long-eared Owl (*Asio wilsonianus*), irregular; Short-eared (*Asio flammeus*), breeding; Barred Owl (*Strix v. varia*), nesting; Snowy (*Nyctea nyctea*), 1921–1922; Saw-whet (*Cryptoglaux a. acadica*) and Screech (*Otus a. asio*).

Kingfisher (*Ceryle alcyon*), decreasing as breeder.

Woodpeckers—Besides common ones, Red-headed (*Melanerpes erythrocephalus*), breeding.

Whip-poor-will (*Antrostomus v. vociferus*), rare; Night-hawk (*Chordeiles v. virginianus*), decreasing; Hummingbird (*Archilochus colubris*), decreasing as breeder.

Crested Flycatcher (*Myiarchus crinitus*), increasing; Least (*Empidonax minimus*) and Wood Pewee (*Myiochanes virens*), decreasing; Alder Flycatcher (*Empidonax trailli alnorum*), holding its own

Horned Lark (*Otocoris a. alpestris*), common in winter; Prairie (*Otocoris alpestris praticola*), rare; Jay (*Cyanocitta c. cristata*), increasing; Crow (*Corvus b. brachyrhynchos*), decreasing; Starling (*Sturnus vulgaris*), increasing; Bobolinks

(*Dolichonyx oryzivorus*), Redwing (*Agelaius p. phæniceus*), decreasing; Orchard Oriole (*Icterus spurius*), not common; Baltimore (*Icterus galbula*), common; Grackle (*Quiscalus quiscula* subsp.), on migrations, common.

Snow Bunting (*Plectrophenax n. nivalis*) and Lapland Longspur (*Calcarius l. lapponicus*), occasional in winter; Vesper Sparrow (*Poæcetes g. gramineus*), increased, 1919–1920, decrease since; Savanna Sparrow (*Passerculus sandwichensis savanna*), breeder, 1922; Grasshopper Sparrow (*Ammodramus savannarum australis*), irregular, invading salt marsh; Sharp-tailed Sparrow (*Passerherbulus caudacutus*), abundant; Seaside Sparrow (*Passerherbulus m. maritimus*), breeds; Chipping Sparrow (*Spizella p. passerina*), local; Towhee (*Pipilo e. erythrophthalmus*), common; Cardinal (*Cardinalis c. cardinalis*), found locally on upland; Rose-breasted Grosbeak (*Zamelodia ludoviciana*), decreasing.

Tanager (*Piranga erythromelas*), irregularly distributed; Purple Martin (*Progne s. subis*), rare; Cliff Swallow (*Petrochelidon l. lunifrons*), not common; Bank Swallow (*Riparia riparia*), not common; Cedar Waxwing (*Bombycilla cedrorum*), increasing.

Warbling Vireo (*Vireosylva g. gilva*), has decreased; White-eyed Vireo (*Vireo g. griseus*), holding its own.

Warblers,—breeders; Black and White (*Mniotilta varia*), occasional; Worm-eating (*Helmitheros vermivorus*), locally; Blue Wing (*Vermivora pinus*), common; Yellow (*Dendroica a. æstiva*), decreasing, Chestnut-sided (*Dendroica pensylvanica*) sparingly; Ovenbird (*Seiurus aurocapillus*), irregular; Louisiana Water Thrush (*Seiurus motacilla*), local; Chat (*Icteria v. virens*), decreasing; Hooded (*Wilsonia citrina*), one record; Redstart (*Setophaga ruticilla*), irregular; Maryland Yellow-throat (*Geothlypis t. trichas*), abundant.

Mockingbird (*Mimus p. polyglottos*), one record; Thrasher (*Toxostoma rufum*), common; Carolina Wren (*Thryothorus l. ludovicianus*), not since 1918; Long-billed (*Telmatodytes p. palustris*), decreasing, formerly common; Titmouse (*Bæolophus bicolor*), breeder; Chickadee (*Penthestes a. atricapillus*), few breed; Wood Thrush (*Hylocichla mustelina*), de-

creasing; Wilson's Thrush (*Hylocichla f. fuscescens*), decreasing; Bluebird (*Sialia s. sialis*), decreasing.

April 24, 1923.—The regular business was dispensed with in order to allow time for the Bird-Banding Program.

The Chair read the following Report of the Bird-Banding Committee.

The Linnæan Society, by authorizing the reappointment of its Committee on Bird Banding, reaffirmed its belief in bird-banding as an important method in ornithology, signified its interest in bird-banding activity as conducted by the Biological Survey, and manifested its purpose of again assisting in the development of bird-banding as a contributory science by an endeavor to extend and coördinate the work in the New York region.

As indicated in previous reports, this meeting of April 24th has been arranged by the Committee with the following purposes in prospect:

- (1) To give present bird-banders and recruits an opportunity of hearing Mr. Baldwin and Mr. Lincoln, and receiving the benefit of their experience with banding methods.
- (2) To demonstrate to others, who have sufficient knowledge of birds, the possibilities of bird-banding, arouse in them a desire to take up the work, and make it possible for them to do so with adequate ideas of purposes and methods.
- (3) To effect some plan of organization which will make feasible a closer contact between banders in the region, better coöperation with the Biological Survey, an increase in the number of bird-banders, and the publication of results.

We feel that it should be made plain to the guests present at this meeting that the Linnæan Society, without any ulterior motive, has invited them to confer with it regarding this organization, and that participation in bird-banding activity does not entail membership in the Society. The Committee wishes to make it plain to the members of the Society that its recommendations of the move toward organizing the work in New York and Northern New Jersey are that the movement be quite apart from the regular activities of the Society. In particular, we make the following recommendations:

That present and future bird-banders residing in New York and Northern New Jersey join in a coöperative movement. If this movement is to be fostered by the Linnæan Society and guided by its Committee on Bird-Banding, it is suggested that banders affiliate by enrolling as "coöperators" with the Committee. "Bird-Banding Coöperators of New York and Northern New Jersey" is suggested as a title.

It is further suggested that the Society make available reasonable

space in its *Abstract of Proceedings* for the publication of results secured by the coöperators, and that at least one meeting a year be devoted to bird-banding for the benefit of coöperators in particular; that coöperators be requested to contribute \$1.00 per annum toward the expenses of printing, postage, etc.

In explanation of this we should state that, after mature thought, we believe that the formation of an entirely new organization to conduct the work would not facilitate or expedite the enterprise until such time as enthusiastic, experienced and active banders, outside the Society membership, appear to direct and support a separate organization.

Mr. S. P. Baldwin, President of the Inland Bird-Banding Association, was introduced. His paper was followed by remarks from Mr. F. C. Lincoln of the U. S. Biological Survey.

May 8, 1923.—The meeting was called to order at 8:15 P.M. in the American Museum of Natural History.

Twenty-four were present. The Membership Committee reported favorably on the name of Miss Mary Tower, Milbrook, N. Y. Miss Tower's election was seconded and carried.

Recent observations of interest were reported as follows:

M. S. Crosby, Dutchess County, New York—April 27, Black-throated Blue Warbler (*Dendroica c. caerulescens*); April 29, Kingbird (*Tyrannus tyrannus*); May 4, Barn Owl (*Aluco pratincola*); May 7, Cerulean Warbler (*Dendroica cerulea*).

Dr. Janvrin, Englewood Region—April 28 (late records), one Tree Sparrow (*Spizella m. monticola*), one female American Merganser (*Mergus americanus*) four Green-winged Teal (*Nettion carolinense*), one male Wood Duck (*Aix sponsa*) (first recorded in this region for ten years).

Laidlaw Williams, Grassy Sprain Reservoir—May 6, about 50 American Crossbills (*Loxia curvirostra minor*).

Clifford Pangburn—Apr. 13, Barrow's Golden-eye (*Clangula islandica*) at Lynn, Mass.; Apr. 28, Prairie Warbler (*Dendroica discolor*) at Bronx Park, Blue-winged Warbler (*Vermivora pinus*) at Bronx Park, Kingbird at Bronx Park; Apr. 29, Veery (*Hylocichla f. fuscescens*); Mar. 3, Glaucous Gull (*Larus hyperboreus*) at junction of Harlem and Hudson Rivers.

The paper of the evening was by Mr. P. Bernard Philipp. It was entitled "Notes on New Brunswick Nesting Birds." Mr. Philipp gave a graphic description of the remarkable region around Tabucintac in the Province of New Brunswick. In this region Mr. Philipp has himself found the nests of eighty-eight different species of birds, including those of nineteen species of Warblers, many of them birds whose nesting habits, prior to the study of this region by Mr. Philipp and some of his associates, were little known. Of these Warblers as many as one hundred and fifty nests of the Tennessee Warbler (*Vermivora peregrina*) have been found in one season within a radius of nine miles from Mr. Philipp's headquarters, and in the same region he has found as many as fifty nests of the Cape May Warbler (*Dendroica tigrina*) and the Bay-breasted Warbler (*Dendroica castanea*). Of the nineteen species of Warblers nesting in this region, all but the Blackburnian (*Dendroica fusca*) are very common.

There are also six species of woodpeckers nesting in this area, including the Arctic Three-toed Woodpecker (*Picoides arcticus*) and the Pileated Woodpecker (*Phlæotomus pileatus abieticola*).

When Mr. Philipp first started to visit this region, the vicinity of his camp was heavily forested, but a few years ago an area ten miles by twenty-five miles was swept by a forest fire. The result has been that the tree-nesting warblers have almost all disappeared; but there has been a great increase in the nesting of woodpeckers and the various bog-nesting warblers, such as the Tennessee.

This region is located about fifty miles from the mouth of the Nemishee River and is within fifteen miles of salt water.

Mr. Philipp illustrated his remarks with numerous slides showing nests and birds, as well as giving an idea of the country covered.

May 22, 1923.—The meeting was called to order at 8:25 P.M. The President and Vice-President being absent, the Secretary called upon Mr. Griscom to occupy the Chair.

Fifteen members and fourteen visitors were present.

The minutes of the preceding meeting were read and approved.

The Membership Committee reported favorably on the names of Mr. Ira Barrows, 14 Maiden Lane, New York City, and Mr. Courtenay Brandreth, Ossining, N. Y., and they were elected active members of the Society.

At Elizabeth, N. J., on May 11, Mr. Urner found 101 species, including a Turkey Vulture (*Cathartes aura septentrionalis*), Palm Warbler (*Dendroica p. palmarum*) and Ruddy Duck (*Erismatura jamaicensis*). He also found a Short-eared Owl's (*Asio flammeus*) nest.

Miss Woodward reported at least two, and perhaps more, Cerulean Warblers (*Dendroica cerulea*) from the Wyandotte region on May 20.

Mrs. Mead observed a Kentucky Warbler (*Oporornis formosus*) at Mt. Kisco, N. Y., and Mr. Pangburn reported a Prothonotary Warbler (*Protonotaria citrea*) at Bronx Park. This bird was first observed on May 13, and was seen for four succeeding days.

Mr. Williams stated that in Dutchess County, on May 13, 129 species of birds were observed, the most noteworthy birds being an Old Squaw (*Harelda hyemalis*), Scaup (*Marila* sp.), and Lesser Yellowlegs (*Totanus flavipes*). On May 20, 120 species were observed, the most interesting bird being the first County record of the Lawrence's Warbler (*Vermivora pinus* × *V chrysoptera*), also six Cerulean Warblers, one of which, a female, was building her nest.

Mr. Hix reported from Long Beach, May 16, a Greater Shearwater (*Puffinus gravis*) (his earliest date). On this same day he also observed 23 Northern Phalarope (*Lobipes lobatus*), 2 Black Terns (*Hydrochelidon nigra surinamensis*), and 75 Black-bellied Plover (*Squatarola squatarola*). Mr. Hix also stated that the Ruffed Grouse (*Bonasa u. umbellus*) in Harriman Interstate Park had had a bad winter, while the forest fires this spring had destroyed many nests and eggs.

Mr. Griscom found a White-crowned (*Zonotrichia l. leucophrys*) and two Lincoln's Sparrows (*Melospiza l. lincolni*) in Central Park on May 12. On the same day at Englewood,

he obtained the second record of the Ring-necked Plover (*Ægialitis semipalmata*) for that region. On May 13, with Mr. J. M. Johnson (Dr. Ellsworth, Dr. Elliott and Dr. Janvrin part time), a total of 99 was observed: two Black Terns adults, the first spring records for New Jersey; a pair of Mallards (*Anas platyrhynchos*), latest date; White-rumped Sandpiper (*Pisobia fuscicollis*), new to region; White-crowned Sparrow, one; Worm-eating Warbler (*Helmitheros vermivorus*), two; Orange-crowned Warbler (*Vermivora c. celata*), four; Tennessee Warbler (*Vermivora peregrina*), two.

On May 16, in Central Park, a Least Sandpiper (*Pisobia minutilla*) was seen, which is new to the Park, as was also a Seaside Sparrow (*Passerherbulus m. maritimus*). The last bird was seen by many others. On May 18, a male Cape May Warbler (*Dendroica tigrina*).

On May 19, together with Messrs. Pangburn and Howland, a day's census was made at Newton, Sussex Co., N. J. A total of 106 species was noted. Birds of note were: Black (*Anas rubripes*) and Wood Duck (*Aix sponsa*), Woodcock (*Philohela minor*), Least Sandpiper, Bald Eagle (*Haliaeetus l. leucocephalus*), Pileated Woodpecker (*Phlæotomus pileatus abieticola*), 25 Pine Siskins (*Spinus pinus*), 2 Savannah Sparrows (*Passerculus sandwichensis savanna*). The presence of many rare and local summer residents makes so large a list possible, and in a favorable year, with better knowledge of the territory, a list of 120 species is a possibility.

October 9, 1923.—The meeting was called to order at 8:20 P.M., with the President in the Chair.

Fifteen members and eleven visitors were present.

The minutes of the preceding meeting were read and approved.

The Secretary read a letter from the Chairman of the Program Committee of the Torrey Botanical Club, in which a desire was again expressed to hold a joint meeting in the near future. The letter was referred to the Program Committee.

The Membership Committee reported favorably on the

names of Mr. James B. Stewart, 268 East Third Avenue, Roselle, N. J., and Mr. Harry L. Ferguson, Fisher's Island, N. Y., and they were elected resident members of the Society.

The Publication Committee reported that work had been begun on Number 33 of the *Proceedings*. This number will include the proceedings of the Society from March, 1920 to March, 1924; also Mr. T. Gilbert Pearson's paper, "Notes on the Winter Bird Life of Southeastern Texas."

For the Avifauna Committee, Mr. L. N. Nichols reported that Mr. Griscom's book, "Birds of the New York City Region" had been published and was now on sale at the American Museum of Natural History.

Mr. Howland moved that suitable commendation be extended to Mr. Griscom and the Committee, expressing the gratitude of the Society for their work on the book, and that the above motion be inscribed in the Minutes. Motion carried.

During August and September Mr. Pangburn spent some three weeks in the Adirondacks and observed 86 species, 20 of these being warblers, one of which was an adult male Prairie (*Dendroica discolor*). He also observed an immature male Hairy Woodpecker (*Dryobates villosus villosus*) with a yellow crown. Other interesting birds noted were a Pileated Woodpecker (*Phlæotomus pileatus abieticola*), Black Tern (*Hydrochelidon nigra surinamensis*), Saw-whet Owl (*Cryptoglaux a. acadica*).

Mr. Howland reported a White Throated Sparrow (*Zonotrichia albicollis*) about his yard at Upper Montclair, N. J. This bird was first seen on July 14 and was observed almost daily until July 31st.

Mr. Friedman reported Willets (*Catoptrophorus s. semipalmatus*) at Jones Beach on August 6th.

Mr. J. T. Nichols observed a Forster's Tern (*Sterna forsteri*) at Mastic, about Labor Day.

Mr. Helmuth reported having seen at least 22 Baird's Sandpipers (*Pisobia bairdi*); on Watermill, Long Island, a Buff-breasted Sandpiper (*Tryngites subruficollis*); on Aug. 24, a Long-billed Curlew (*Numenius americanus*), and on Sept. 8, a Curlew Sandpiper (*Erolia ferruginea*); two Mocking-birds

(*Mimus p. polyglottos*) were observed at Montauk, Long Island.

Mr. Nichols said that at Mastic, L. I., the Jack Curlew (*Numenius hudsonicus*) was at least 50 per cent. more common this year, and that there were easily five times as many Willet passing through as in other years.

Mr. L. N. Nichols reported that on May 29, at Long Beach, L. I., with Dr. Chas W. Miller and W. Eanes, he observed two Least Bitterns (*Ixobrychus exilis*). Chats (*Icteria v. virens*) were breeding in the Saw-Mill Lane district of the Bronx, in spite of the building of cottages. Mr. Nichols also gave some interesting notes from Western Massachusetts and the Adirondacks.

Mr. Hix reported a flock of 53 Knots (*Tringa canutus*) with other shore-birds at Long Beach, on June 3. At the same place, on Aug. 14, a male Purple Martin (*Progne s. subis*), and on Aug. 26, 7 Short-eared Owls (*Asio flammeus*). At Bronx Park, on Sept. 16, an Olive-sided Flycatcher (*Nuttallornis borealis*), and on Sept. 23, at Van Cortlandt Park, a Pied-billed Grebe (*Podilymbus podiceps*), a Florida Gallinule (*Gallinule galeata*), and a Philadelphia Vireo (*Vireosylva philadelphica*); on Oct. 6, at the same place, three juvenile Cape May Warblers (*Dendroica tigrina*), Tennessee (*Vermivora peregrina*) and Palm Warbler (*Dendroica p. palmarum*); on Oct. 7, near Englewood, three White-crowned Sparrows (*Zonotrichia l. leucophrys*).

On May 27, Dr. Janvrin, in company with Mr. Crosby, Mr. Griscom, and Mr. Johnson, at Jones Beach, saw a Red-throated Loon (*Gavia stellata*) (latest date for Long Island, except May 29, 1919, at Long Beach, by Mr. Bicknell); Common Cormorant (*Phalacrocorax carbo*) (two other records for south shore of Long Island); Little Blue Heron (*Florida cærulea*), one immature; also seen on May 26 by Crosby and Griscom, 15 Hudsonian Curlew, Acadian Sharp-tailed Sparrow (*Passerherbulus nelsoni subvirgatus*) (1 collected by Griscom; earliest spring record for Long Island).

On July 18, at Hunts Point, Bronx, with Dr. Denton, 9 species of Limicolæ were observed; two Dowitcher (*Macro-*

rhamphus g. griseus), only Bronx record, and the earliest fall migration records for the Bronx region for the following: Pectoral Sandpiper (*Pisobia maculata*), Least (*Pisobia minutilla*), Semipalmated (*Ereunetes pusillus*), Greater Yellowlegs (*Totanus melanoleucus*), Lesser Yellowlegs (*Totanus flavipes*), Semipalmated Plover (*Ægialitis semipalmata*).

From the Elizabeth region, Mr. Urner reported: Mallard (*Anas platyrhynchos*), new early Fall date, July 27—1; Sept. 12—1; American Egret (*Herodias egretta*), Aug. 23—1; Aug. 30—1; Little Blue Heron, July 21—1; Northern Phalarope (*Lobipes lobatus*), Aug. 10—1. Woodcock (*Philohela minor*), June 27—1 adult, 2 young. Baird's Sandpiper, Sept. 6—1 (probably correct but not collected). Hudsonian Curlew, Aug. 23—1. Golden Plover (*Charadrius d. dominicus*), Aug. 23—1; Aug. 30; Sept. 3; Oct. 7. Short-eared Owl, 5 nests this season. Bank Swallow (*Riparia riparia*), breeding. Tennessee Warbler, Sept. 29, first local record. Carolina Wren (*Thryothorus l. ludovicianus*), frequently seen since Aug. 10. Short-billed Marsh Wren (*Cistothorus stellaris*), June 17, first local record. Hermit Thrush (*Hylocichla guttata pallasii*), a bird with conspicuous whitish wing-bars, seen last year, found at same spot Oct. 7.

October 23, 1923.—The meeting was called to order at 8:25 P.M., with the President in the Chair.

Thirteen members and six visitors were present.

The minutes of the preceding meeting were read and approved.

Mr. Urner reported a Lesser Yellow-legs (*Totanus flavipes*) from the Elizabeth, N. J., region on Oct. 14, 16, and 18. These are the latest New Jersey dates for that species, as also a Ruby-throated Hummingbird (*Archilochus colubris*), on Sept. 30, for New Jersey. Other latest New Jersey dates are, a Magnolia Warbler (*Dendroica magnolia*) on Oct. 14, and a House Wren (*Troglodytes a. aëdon*) on the same date. Mr. Howland also reported a House Wren on the same date, from Upper Montclair.

A Whip-poor-will (*Antrostomus v. vociferus*), heard on July

19, is the first summer record in many years for Elizabeth, N. J. A Henslow's Sparrow (*Passerherbulus h. henslowi*) on Oct. 12 is the first record as a transient in this region. On this same date a Goldfinch (*Astragalinus t. tristis*) was observed feeding a young bird. Fox Sparrows (*Passerella i. iliaca*) on Oct. 12 and Tree Sparrows (*Spizella m. monticola*) on Oct. 14 were early. A Pine Siskin (*Spinus pinus*) on Oct. 21 was the earliest for that region. A Golden Plover (*Charadrius d. dominicus*) was killed by a hunter on Oct. 19.

ABSTRACT OF PAPER ON HUMAN AND NATURAL DESIGNS, BY WILLIAM K. GREGORY.

The speaker defined a design as any construction, of either human or natural origin, having its parts so arranged that the thing as a whole is useful or beautiful. He showed that living matter is forever dealing with a future by means of a present which has grown out of a past; that in animals the nervous system constitutes the organ by which the organism effects its adjustments to objectives in the near and in the remote future. Consciousness, using this term in its widest sense, reflects the purposive or anticipatory activities of life and the activities of the human mind are adapted primarily for the needs of the future. The human mind, equipped with associative memory and the records of tradition, learns to foresee more and more remote events and to construct master patterns or designs, often involving many successive stages of operation.

Nature also abounds in processes and arrangements having the appearance and complexity of human designs and often embodying many successive stages and grades of development. The speaker then exhibited lantern slides, drawings by Miss Isabel Cooper and others, illustrating natural designs. Natural designs show a considerable list of features in common with human designs. For example, they often involve the orderly juxtaposition of large numbers of relatively small units; they serve similar functions as do human designs, that is, they favor certain forces or systems at the cost of others, or they balance one set of forces against another so as to produce the equilibrium and stability necessary for some special operation, or they tend to limit, direct, or otherwise modify the struggle of contending forces.

The sense of beauty seems to be a response to the elements of design as described above; the orderly juxtaposition of large numbers of relatively small units will offer to the eye a recurrence of rhythm of light and dark spots or to the ear a repetition of similar and contrasting sounds. The most effective human designs probably please us through their mass effect and through the super-position of large movements

against a simple repetitive background as do also many of nature's masterpieces. The beauty and orderly arrangement of the parts of a natural design was often the direct result of the operation of atomic and molecular forces, as in the case of snow crystals, or of the rhythmic forces of growth, as in the beautiful forms of shells, diatoms, etc.

The speaker was inclined to attribute the marked resemblances between human and natural designs to the fact that the human mind, from his viewpoint, is only a more or less perfect reflector of the designs and order of nature and is able to put together the elements of nature's designs in ways and with results that parallel those of nature. After tracing the evolution of the human mind from that of lower organisms, he concluded that both human and natural organic designs had evolved through the process of natural selection, operating upon favorable variations. The greater part of the paper was concerned with the elaboration of this view.

November 13, 1923.—The meeting was called to order at 8:20 P.M., with the President in the Chair.

Twenty members and fifty-one visitors were present.

The minutes of the preceding meeting were read and approved.

A communication was received from Mr. Howard H. Cleaves, in which he expressed the desire to present to the Society his latest illustrated lecture, "Camera Shots from the Far Southwest." Mr. Cleaves could give us but a few days in December, and it was decided that as the second meeting of the month fell on Christmas, this meeting be held on the previous Tuesday, Dec. 18, thus giving Mr. Cleaves a chance to appear before the Society.

Mr. Pearson spoke about the proposed plan of Mr. Edward A. McIlhenny to establish a shooting club of 4,000 members, on the Gulf Coast of Louisiana, immediately adjoining the Rockefeller and the Sage Wild Life Reservations, and the Louisiana State Reservation. Mr. L. N. Nichols moved that the President name a committee of three to draw up a resolution stating that the Society disapproved of the above plan, and that copies of the resolution be sent to Mr. Edward A. McIlhenny, President of the Louisiana Gulf Coast Club, to Governor John M. Parker, of Louisiana, and to Mr. T. Gilbert Pearson of the National Audubon Societies. This motion was seconded and carried.

Mr. Howland reported for the Bird-Banding Committee that the movement for a local association initiated by the Linnaean Society's meeting of last April had recently resulted in the organizing of the "Eastern Bird-Banding Association."

Mr. Helme reported an Evening Grosbeak (*Hesperiphona v. vespertina*) near Medford, on Oct. 27, and on Nov. 2 Laughing Gulls (*Larus atricilla*) and an adult Iceland Gull (*Larus leucopterus*). During September he had seen a Carolina Wren (*Thryothorus l. ludovicianus*) near Mt. Sinai, Long Island.

On Sept. 10, at Bronx Park, Mr. L. N. Nichols obtained the first fall record of a Chestnut-sided Warbler (*Dendroica pensylvanica*) for that region and on Sept. 24, another. Sept. 10 was also the earliest record for a Sharp-shinned Hawk (*Accipiter velox*), and Sept. 17 for a Pied-billed Grebe (*Podilymbus podiceps*); Sept. 30, for Ruby-crowned Kinglets (*Regulus c. calendula*). This same date was also the latest fall record for Canadian Warblers (*Wilsonia canadensis*) and Magnolia Warblers (*Dendroica magnolia*), both of which were seen on that day, as was also a green flycatcher that may have been an Acadian (*Empidonax virescens*).

The paper of the evening, by Mr. T. Gilbert Pearson, was entitled "Rambles of a Bird Protectionist in Europe." Mr. Pearson described his experiences during a trip he took to Europe this summer in behalf of the project of international protection of birds. He visited France, England, Holland, Switzerland, Austria and Italy. While in Paris he addressed the National Convention. Later he showed slides from pictures he had taken while on a trip down the Kissimmee River to Lake Okechobee in Florida; also pictures taken while on Andros Island. His visit here was too early for the breeding season of the Flamingos (*Phaenicopterus ruber*) and he saw but one bird. His next visit was at the Wells Bird Reservation, off the coast of southern Texas, where he obtained remarkable photographs of the Reddish Egret (*Dichromanassa rufescens*) in both the dark and white phases.

RESOLUTIONS DRAWN UP BY COMMITTEE APPOINTED BY THE PRESIDENT

WHEREAS, it has come to the attention of this Society that a plan is on foot to establish a club of 4,000 members on a territory of approximately 100,000 acres on the Gulf Coast of Louisiana, immediately adjoining the wild life reservation established by the Rockefeller Foundation, and in the neighborhood of the Sage Wild Life Reservation and the State Wild Life Reservation, and

WHEREAS, we learn that this proposed Louisiana Gulf Coast Club will permit shooting privileges to 2,000 of its members, and

WHEREAS, the Sage Foundation representing the heirs of Mrs. Russell Sage, and also the Rockefeller Foundation, has filed strong protests against the establishment of this club on the grounds that by means of baiting and other inducements wild fowl may be brought from the reservations to be shot on this proposed club territory, and

WHEREAS, in the opinion of this Society such action on the part of the promoters of the Louisiana Gulf Coast Club is not in the highest interests of conversation of wild life;

THEREFORE, *be it resolved* that the Linnæan Society of New York hereby protests against the establishment of this large shooting club in the midst of these wild life reservations, and urges that those responsible for the undertaking seriously consider the proposition put forward by the National Association of Audubon Societies; that all unite in an effort to make a bird reservation of the territory, and that copies of these resolutions be sent to Edward A. McIlhenny, President of the Louisiana Gulf Coast Club, to Governor John M. Parker, of Louisiana, and to the daily papers published in the city of New Orleans.

T. GILBERT PEARSON,
JONATHAN DWIGHT,
T. DONALD CARTER,
Committee.

November 27, 1923.—The meeting was called to order at 8:20 P.M., with the President in the Chair.

Twenty-one members and thirty-four visitors were present.

The minutes of the preceding meeting were read and approved, as corrected.

The resolution, drawn up by the Society and protesting against the proposed plan of Mr. Edward A. McIlhenny to make a shooting preserve immediately adjoining the Rockefeller and the Sage Wild Life Reservation, and the Louisiana State Reservation, on the Gulf Coast of Louisiana, was read. The motion was made that this resolution be also sent to the

Louisiana Game Commission and any other prominent, interested men in New Orleans.

A letter was received from four boys of the Walden School who expressed a desire to have their Nature Club a Junior Branch of the Linnæan Society. The following motion was made and adopted: That the Linnæan Society approves of the formation of local Junior Bird Study Clubs, which may, if they so desire, be known as Auxiliaries of the Linnæan Society, and consider ornithological observations submitted by such clubs at its regular meetings.

For Central Park, Mr. Griscom reported 8 Mourning Warblers (*Oporornis philadelphia*) between Aug. 14 and 29; Philadelphia Vireo (*Vireosylva philadelphica*), Sept. 16-17; a Cerulean Warbler (*Dendroica cerulea*), Sept. 15, seen by Mr. Boulton; a pair of Green-winged Teal (*Nettion carolinense*) (1st record), Oct. 26; 2 Pine Grosbeaks (*Pinicola enucleator leucura*), Nov. 19, by Mr. Charles Johnson (1st record in 20 years), and a flock of Scaup Ducks flying over.

At Jones Beach, Aug. 25-26, with Messrs. Boulton, Carter, and Urner, 60 species: 15 species of shore birds, Glaucus (*Larus hyperboreus*) and Black-backed Gull (*Larus marinus*); Terns abundant, including Roseate (*Sterna dougalli*) and Least (*Sterna antillarum*); Gadwall (*Chaulelasmus streperus*) and Ruddy Duck (*Erismatura jamaicensis*), Baird's (*Pisobia bairdi*) and Western Sandpiper (*Ereunetes mauri*) and Mockingbird (*Mimus p. polyglottos*). Sept. 1-2, with Carter, 64 species: 8 species of ducks, 16 species of shore birds, positively, and 3 doubtful; Parasitic Jæger (*Stercorarius parasiticus*), 5; Gadwall, 2; Little Blue Heron (*Florida cærulea*), 1; Dowitcher (*Macrorhamphus g. griseus*), Stilt Sandpiper (*Micropalama himantopus*), Knot (*Tringa canutus*), Baird's, White-rumped (*Pisobia fuscicollis*) and Western Sandpiper, Short-eared Owl (*Asio flammeus*).

Bronx region: Aug. 31, Double-crested Cormorant (*Phalacrocorax a. auritus*), flying over Riverdale from Hudson to Sound; new to region.

Mr. L. N. Nichols reported the earliest fall record of the

Tree Sparrow (*Spizella m. monticola*) for Van Cortlandt Park, on Nov. 5, when 4 birds were seen.

Mr. Pangburn mentioned that an Arctic Three-toed Woodpecker (*Picoides arcticus*) had been reported to him as having been seen in Bronx Park. Although he did not see the bird, he believed the informant was reliable.

Mr. Crosby said that the Pine Grosbeaks had arrived in Dutchess County on Nov. 2. On Sept. 30 the first Dutchess County record for the Double-crested Cormorant was secured.

For the Elizabeth region Mr. Urner had observed a Barn Owl (*Aluco pratincola*) on Nov. 4, and a Saw-whet (*Cryptoglaux a. acadica*) on Nov. 5 and 17.

Mrs. H. W. Smith told of her finding sick Herring Gulls (*Larus argentatus*) on the beach at Fire Island, and after feeding them fish for a few days restored the majority to health and liberated them.

The paper of the evening was by Mr. Oliver P. Medsger and was entitled "Birds of the Catskill Mountains."

Mr. Medsger had spent at least two months every summer in the Southern, Eastern, or Northern Catskills, and has made some very interesting observations in regard to the bird life of this country. He had found 15 species of warblers breeding, among these the Blackburnian (*Dendroica fusca*), the Magnolia (*Dendroica magnolia*), and the Black-throated Green (*Dendroica virens*). The Phæbe (*Sayornis phæbe*) proved to be one of the commonest birds of the region, building about the buildings and the rocks near the many waterfalls. He found evidence of the Pileated Woodpecker (*Phlæotomus pileatus abieticola*) in the same spot where four years before it had been observed by Mr. John Burroughs. He spoke of the variety of trees that were attacked by the Sapsucker (*Sphyrapicus v. varius*), and had found 19 species which this bird had fed upon.

Many interesting slides were shown, among which was the nest of the Mourning Dove (*Zenaidura macroura carolinensis*) taken on the 20th of March, a very early record; the nest of a Robin (*Planesticus m. migratorius*), the owner of which had the strange habit of feeding the young small snakes. The

bird successfully fed the young a nine-inch snake, but an eleven-inch garter snake was more than the young bird could handle. Another slide showed a Chimney Swift (*Chætura pelagica*) that had built its nest on the side wall of the interior of an old barn, where interesting observations were made, as the birds were easily studied. The young birds when they were but a little over a week old left the nest but still clung to the walls nearby. It was not until they were forty days old that they flew from the barn. Many interesting slides of Mr. John Burroughs were also shown.

December 11, 1923.—The meeting was called to order at 8:15 P.M., with the President in the Chair.

Fourteen members and twenty-two visitors were present.

The minutes of the preceding meeting were read and approved.

Dr. Janvrin reported American Golden-eye (*Clangula clangula americana*) at Long Beach, on Dec. 1st.

Mr. Wheeler reported the following imitative notes of the Starling as observed by him: the whistle of a boy and that of a mill; the bark of a dog, call of a Quail, Crow, Flicker, Wood Pewee, Meadowlark, Cowbird, Purple Grackle, Chickadee, House Sparrow, Red-shouldered Hawk, Goldfinch, Rose-breasted Grosbeak, Purple Finch, Blue Jay, Phoebe, Robin, Veery, Wood Thrush, Yellow Warbler, Barn and Tree Swallows, Chewink, Downy and Hairy Woodpeckers, Baltimore Oriole, Cedar Waxwing, Song Sparrow, Bluebird, Night-hawk, Kingbird, Red-winged Blackbird, Scarlet Tanager, and the peeping of a small chicken.

The paper of the evening was by Dr. E. W. Gudger, entitled "The Life History of the Whale Shark."

The Whale Shark, *Rhinedon typus*, was first made known to science in 1828, when a species was captured at the Cape of Good Hope and described by Dr. Andrew Smith. Since that time there have been thirty-two definite records of the taking of this fish in widely separated portions of the world; but the chief habitat appears to be in the waters in or contiguous to the Indian Ocean. This is the largest existing fish and cap-

tured specimens have ranged from fourteen to forty-five feet, while there have been reports of specimens seen that were as long as seventy feet. In color above and on the sides this fish is a mouse-gray, covered with white spots about the size of a half dollar, becoming smaller and more numerous on the head. The belly is white. The jaws are exceedingly large, with very minute teeth. It appears to be omnivorous in feeding, and both fish and plant life have been taken from its stomach. Although this shark is so large, it appears to be very inoffensive, and even when attacked makes no particular resistance.

Dr. Gudger then described the taking of a 31½-foot Whale Shark off the coast of Florida this summer, and a five-foot model of this fish was shown. Some of the teeth, a section of the skin, and numerous photographs of this shark were exhibited.

December 18, 1923.—The meeting was called to order at 8:15 P.M., with the President in the Chair.

Sixteen members and fifty-nine visitors were present.

The minutes of the preceding meeting were read and approved.

Mr. Griscom reported an Arctic Three-toed Woodpecker (*Picoides arcticus*) observed by himself and Mr. S. V. LaDow at Englewood on Nov. 29. The bird was later collected by Mr. Weber and is now in the collection of the American Museum of Natural History.

The paper of the evening was by Mr. Howard H. Cleaves, entitled "Camera Shots from the Far Southwest."

For about a year Mr. Cleaves had been connected with the San Diego Museum at San Diego, Calif., this giving him an excellent opportunity for securing some remarkable photographs of that interesting country. Many interesting views were shown of the wild life near the Museum, as for example a wild cat (*Lynx ruffus californicus*) shot in the yard of the Museum; a Burrowing Owl (*Speotyto cunicularia hypogaea*) living in a culvert under the street; nests of Linnets, House Finches (*Carpodacus mexicanus frontalis*) and Hummingbirds; also pictures of Mockingbirds (*Mimus polyglottos leu-*

copterus); Ash-throated Flycatchers (*Myiarchus c. cinerascens*), Gambell's Sparrow (*Zonotrichia leucophrys gambeli*), and the Western Meadowlark (*Sturnella neglecta*). Numerous mammal pictures were also shown, including the California ground squirrel (*Citellus grammurus*) (a rodent which does great damage to the grain fields of this district), young raccoons (*Procyon lotor californicus*) and skunk (*Mephitis occidentalis holzneri*). There were many views of the different types of country, from the desert with its sage, to the forested mountain parks. There were also photographs of Enos Mills, known as the Burroughs of the West, and of Ernest Harold Baynes in the act of riding an ostrich.

Mr. Cleaves also showed slides and described a trip taken to the Coronados Islands with Messrs. A. W. and H. E. Anthony. Farallon Cormorants (*Phalacrocorax auritus albociliatus*) and Brown Pelicans (*Pelecanus californicus*) were found breeding there. The only native mammal, besides the Sea-lions (*Zalophus californianus*), was a White-footed Mouse (*Peromyscus maniculatus dubius*).

January 8, 1924.—The meeting was called to order at 8:30 P.M., with the President in the Chair.

Fourteen members and twenty-four visitors were present.

The minutes of the preceding meeting were read and approved.

Mr. Howland reported five Ruddy Ducks (*Erismatura jamaicensis*) observed on the Reservoir at Boonton, N. J., by Mr. Cleaves and himself on December 19th.

Mr. Crosby, in Dutchess County, obtained 30 species of birds for his Christmas census, the more notable of which were the American Widgeon (*Mareca americana*), Towhee (*Pipilo e. erythrophthalmus*), and fourteen Grackles (*Quiscalus quiscula* subsp.).

In the Christmas census at Elizabeth, N. J., Mr. Urner observed 29 species, the most interesting being the Carolina Wren (*Thryothorus l. ludovicianus*).

Mrs. Mead spoke of her feeding station in Central Park where a Chickadee (*Penthestes a. atricapillus*) and Red-

breasted Nuthatch (*Sitta canadensis*) feed from her hand. A White-throat (*Zonotrichia albicollis*) was a constant visitor and up to a few days previous a Fox Sparrow (*Passerella iliaca*) was seen daily.

The paper of the evening was by Mr. Harry Raven and was entitled "Australian Marsupials and Their Environment."

Mr. Raven had spent nearly two years in Australia and Tasmania collecting the rapidly disappearing forms of mammals found on these islands for the American Museum of Natural History. Mr. Raven stated that it is believed that formerly South America and Australia were connected, thus accounting for the similarity of certain groups of marsupials inhabiting both countries. Others maintained that the Australian marsupials had migrated into Australia from India.

Mr. Raven showed many interesting slides picturing the type of country that he collected in, and also many slides of the mammals, including Kangaroos, Wombats, Bandicotts, and Phalangers.

January 22, 1924.—The meeting was called to order at 8:20 P.M. In the absence of the President and the Vice-President, Mr. L. N. Nichols took the Chair.

Eleven members and eighteen visitors were present.

The minutes of the preceding meeting were read and approved.

It was voted that the President appoint a Committee to make arrangements for the Annual Dinner.

Mr. Urner, on Jan. 12, observed a small flock of Brant (*Branta bernicla glaucogastra*) in the Elizabeth region. This was the first local record in 25 years.

At Long Beach, on Jan. 13, with Dr. Elliott, Dr. Janvrin recorded a Double-crested Cormorant (*Phalacrocorax a. auritus*); this is the latest date for that locality.

Mr. Edward Spingarn reported a Pileated Woodpecker (*Phlæotomus pileatus abieticola*) at Aminia, Dutchess County, N. Y.

The paper of the evening was by Mr. S. H. Chubb and was entitled "Sea Birds of the Matinicus Islands."

Matinicus lies about twenty-one miles southeast of Rockland, Maine, and is reached by a motor-boat. A few fishermen live on this island. On a neighboring island, Ten Pound Island, a large colony of Herring Gulls (*Larus argentatus*) were found breeding. At the time of the visit, the middle of June, the breeding season appeared to be at its height, as both eggs and well-grown young were observed.

Many interesting slides were shown of this colony, and also of a colony of Arctic Terns (*Sterna paradisæa*) which were found on still another island, Matinicus Rock. Other birds of note were Black Guillemot (*Cepphus grylle*), Leach's Petrel (*Oceanodroma leucorhoa*), the nest of a Northern Raven (*Corvus corax principalis*), and another nest which was believed to belong to the Common Cormorant (*Phalacrocorax carbo*). The common land bird was the Savannah Sparrow (*Passerculus sandwichensis savanna*), which was very abundant.

Mr. Chubb also obtained some very interesting photographs of whales.

Regular meeting of the Linnæan Society for Feb. 12, 1924, postponed on account of its conflicting with Lincoln's Birthday.

February 26, 1924.—The meeting was called to order at 8:20 P.M., with the President in the Chair.

Seventeen members and fifty-five visitors were present.

The minutes of the preceding meeting were read and approved.

Mr. Urner reported a large flock of Canvasback Ducks (*Marila valisineria*) on the Bay near Elizabeth, N. J., having been observed for a month; and at Barnegat, N. J., on Feb. 16, with Mr. Carter, a European Widgeon (*Mareca penelope*) and great numbers of Gannets (*Sula bassana*) on the 17th.

Mr. J. T. Nichols also spoke of seeing about 400 Canvasbacks at Mastic, Long Island, on Feb. 23.

Mr. L. N. Nichols, for the Bronx region, reported an adult Bonaparte Gull (*Larus philadelphia*) on the Harlem River near Baker Field, on Feb. 3. He had observed Redpolls (*Acanthis linaria*) on Feb. 4 and 25 at Pelham Bay, as also on the 11th at Bronx Park.

Mr. Hix had observed a Duck Hawk (*Falco peregrinus anatum*) in Central Park on Feb. 9; on Feb. 28 a Bob White (*Colinus v. virginianus*) in Van Cortlandt Park.

At Long Beach, with Mr. F. E. Watson, Mr. Carter observed a Kittiwake Gull (*Rissa t. tridactyla*) on Feb. 10, and on the 12th an Iceland Gull (*Larus leucopterus*).

The paper of the evening was by Mr. Herbert Lang and was entitled "In the Interior of British Guiana, with Remarks on the Fauna and Flora as Compared with that of the West African Rain Forest."

Mr. Lang had taken a six months' trip into the diamond fields of British Guiana. On the way south he had spent a short time on the Island of Granada and at Trinidad, where he had visited the famous Asphalt Lake. After arriving at Georgetown, British Guiana, his journey was resumed up the Mazaruni River by power boat; after about a week's journey he reached the diamond fields, 180 miles inland.

Many interesting slides showed the process by which the diamonds were obtained from the gravel. The diggers, mostly negroes, hold claims, and either use toms to separate the diamonds or else pan for them by the same process that is done for gold. The stones were sold to diamond merchants by these laborers.

Mr. Lang showed many interesting slides of the fauna and flora, perhaps the most interesting among the former being a small marsupial which has heretofore never been described, and a large tree-toad (*Hyla evansi*), carrying twenty-four well-developed eggs on its back. This proved to be the second time one of these frogs was ever captured in this condition; the other specimen, captured some twenty years ago, going to Europe.

Mr. Lang also showed some very interesting views of the forests of both Africa and South America. The American forest proved to be much more open, without the thick underbrush for which the African is noted. The outline of the top of the American forests is remarkably even—very few trees towering up above their neighbors—while the African forest presents a more varied outline. Other interesting pictures

showed the native Akawoi Indians. These Indians are very short of stature, many of them being even smaller than the famous Congo Pygmies.

The lantern slides were followed by a reel of interesting motion pictures, after which a general discussion followed.

March 11, 1924.—The Annual Dinner of the Society was held in the Mitla Restaurant of the American Museum of Natural History, at 7:00 P.M.; 48 members and guests were present.

At nine o'clock the Annual Meeting was called to order, with the Vice-President in the chair.

Thirty-two members and 30 guests and visitors were present.

The minutes of the preceeding meeting were read and approved.

In the absence of the Treaurer the Secretary read the Annual Report. There was a Balance on Hand, March 5, 1924, of \$3,362.64. The Auditing Committee, already appointed by the chair, consisting of Dr. Dwight and Mr. Granger, reported that it had examined the accounts of the Treasurer and found them correct. The report of the Treasurer was thereupon accepted by the Society.

The Secretary then read his Annual Report as follows:

During the past year the Linnaean Society has held 15 meetings—the first meeting of February being omitted as it fell on Lincoln's Birthday. The total attendance was 705. This is the largest attendance in the history of the Society with the exception of the year 1912, during which year a joint meeting was held with the Audubon Society, bringing the total attendance for that year up to 824.

The Eleventh Annual Dinner was attended by 53 members and guests and 36 member were present at the Annual meeting on the same evening. At the remaining 14 meetings the total attendance averaged 45.9, that of members 16.9.

The largest number present at any one meeting was 110, the Bird Banding Meeting of April 24; the smallest attendance was that of October 23, with 19 present.

Three members have resigned and eight new members have been elected, so that the membership now stands; resident, 103; corresponding, 24; honorary, 3; total, 130; the largest since 1915.

Twelve papers have been presented to the Society, 1 on Ornithology, 7 on Travel, 1 on Ichthyology, 3 Faunal, 1 meeting, which fostered the

formation of the Eastern Bird Banding Association, was on Bird Banding, and two evenings were devoted entirely to field observations.

Abstract of the Proceedings Nos. 33, 34, 35, for the years 1921, 1922, 1923 together with Mr. T. Gilbert Pearson's paper, "The Winter Birds of Southern Texas," is now in the hands of the printer.

Respectfully submitted,

T. DONALD CARTER,
Secretary.

The report of the Secretary was accepted by the Society.

The next order of business was the annual election of officers. The following were elected:

PRESIDENT, John T. Nichols.

VICE-PRESIDENT, Dr. E. R. P. Janvrin.

SECRETARY, C. A. Urner.

TREASURER, T. Gilbert Pearson.

The paper of the evening by Mr. Walter Granger was entitled "Fossil Collecting in China and Mongolia."

Mr. Granger had spent the last two years as a member of the Third Asiatic Expedition. Interested chiefly in vertebrate fossils, and on account of the coming winter, being unable to proceed into Mongolia, it was decided that during the cold weather the work would be carried on somewhere in southern China. After much inquiring, it was found that numerous fossilized bones were brought out of the mountains of southern Szechuan Province. These bones were sold to the apothecaries, who ground them up and used them for medicine.

After an interesting voyage up the Yangtze River, a river which in some places has a yearly rise and fall of over 138 feet, he arrived at his destination. Upon inquiry, he was surprised to find that the bones came from the top of a limestone ridge, some 1,700 feet above sea level. This ridge was about 75 miles long and about 1 mile wide. Along the apex were numerous pits, some many feet deep. It was from these pits that the fossils were dug. Most of the pits had been filled up with mud and dirt, and the farmers of the district spent their winter months digging out and collecting the bones, which were sold to the apothecary. Mr. Granger bought his

specimens from these excavators. Two winters were spent in this locality.

Mr. Granger's summer months were spent in Mongolia with Mr. Andrews. Many interesting specimens were obtained, the most interesting of which were the dinosaur eggs. These eggs were supposed to have been laid by an ancestor of Triceratops, a three-horned dinosaur that has been found in North America. Besides the egg numerous young of the dinosaur of varying ages were found.

Many interesting slides and motion pictures illustrated the paper.

Meeting adjourned at 11:10 P.M.

Notes on the Winter Bird Life of Southeastern Texas

BY T. GILBERT PEARSON

The observations recorded in the following pages were made between November 23 and December 25, 1921. The territories visited covered different sections of the country between Brownsville and Point Isabel on the south and Kingsville and Laureles Ranch on the north, covering portions of the counties of Cameron and neighboring counties. A considerable portion of the time was spent on the great King cattle ranch.

During much of my field trip I was accompanied by R. D. Camp of Brownsville and also received many courtesies and assistance from Cæsar Kleberg at Norias and Richard M. Kleberg of Kingsville.

Larus argentatus. Herring Gull.—Four seen at Point Isabel November 25 and 26. Two were in evidence at Moro Island on December 20.

Sterna máxima. Royal Tern.—Several were flying about the islands and bars in Laguna Madre near Point Isabel, November 26. Others were seen at Moro Island December 20.

Sterna forsteri. Forster's Tern.—A specimen was collected by Camp on Moro Island near the mouth of Arroya Coloral on December 20. It was shot from a flock of perhaps 100 Terns that were resting on the shoals.

Rynchops nigra. Black Skimmer.—A flock estimated to contain from 200 to 300 Black Skimmers was flying about the waters inside the Inlet at Point Isabel on November 24.

Phalacrocorax vigua mexicanus. Mexican Cormorant.—Seen at various points along the Laguna Madre and five were noted flying over the Rio Grande at Brownsville, November 24.

Pelecanus erythrorhynchos. White Pelican.—On the morning of December 13 eleven White Pelicans claimed our attention for some time as they circled overhead near the El Sauz ranch-house. Six others were seen previously at Point Isabel on November 24.

Anas platyrhynchos. Mallard.—A common duck about the water-holes and sloughs on the King Ranch.

Chaulelasmus streperus. Gadwall.—Seen frequently. One pair was frightened from a ditch not over a yard wide on Laureles Ranch.

Mareca americana. Baldpate.—One of the ducks often found throughout the entire region.

Nettion carolinense. Green-winged Teal.—Found to be a common winter visitor, usually going about in small flocks. A female was found resting in a small earthen tank near Laguna Larga, December 22.

Querquedula cyanoptera. Cinnamon Teal.—A full plumaged male was shot from a flock of fourteen at the overflow pond near El Sauz, November 30.

Spatula clypeata. Shoveller.—This handsome, but poor table duck, was seen on many occasions. Usually they were in pairs.

Dafila acuta. Pintail.—A very common winter resident, that is much shot and highly esteemed for the table.

Marila americana. Redhead.—Redheads were observed in great numbers resting on the water of Laguna Madre near Point Isabel, November 23 and 24. Late in the evening many thousands were seen flying from points inland to the Laguna. The species was common on most of the ponds visited on the King Ranch.

Marila valisineria. Canvasback.—The only two Canvasbacks noted were a pair observed at close range swimming near the bridge over the resaca in the Fort Brown reservation at Brownsville. This was on December 21.

Marila affinis. Lesser Scaup Duck.—The roar of wings as great flocks of these birds swept down from the sky to the quiet waters of the pond at the El Sauz ranch-house will long live in my memory. These birds also were seen at many other places.

Harélda hyemalis. Old Squaw.—One of the surprises of my visit to south Texas was to find the Old Squaw. At least a dozen apparently lived continually on the pond at El Sauz ranch-house, during the first three weeks of December. Four specimens were taken. Two others were secured during this time at a pond perhaps fifteen miles to the northward.

Erismatúra jamaicensis. Ruddy Duck.—Ruddy Ducks were taken at El Sauz and identified at three other points on the great King Ranch.

Chen hyperboreus hyperboreus. Snow Goose.—Numerous flocks of Snow Geese were seen feeding on the prairies about Laguna Larga on December 23. At least 400 were seen in a field near the railway 15 miles north of Kingsville on December 24. They are common winter residents in South Texas.

Chen caerulescens. Blue Goose.—Although the coast country of Louisiana is the main winter home of the Blue Goose in the United States, it does occur to some extent along the Texas coast, often as far south as the Rio Grande if reports of local gunners may be considered reliable. One specimen was seen and positively identified in a flock of Snow Geese at Laguna Larga December 23.

Branta canadensis canadensis. Canada Goose.—Canada Geese are reported to be not uncommon, but at a distance it was impossible to distinguish between this and the Hutchins' Goose, and only on one occasion where there was opportunity for comparison was I sure of the identification of this subspecies. This was at Laguna Larga, December 23.

Branta canadensis hutchinsi. Hutchins' Goose.—The Hutchins' Goose winters in great numbers in the South Texas country. At least twenty flocks were in sight in a drive across the prairies to Laguna Larga, December 23. They appeared more numerous than the Snow Goose, which is an extremely abundant species. I also saw flocks on two occasions during the first week in December at El Sauz, and others were found feeding on the prairies near there during the same period. None was seen in the water.

Ardea herodias wárdi. Ward's Heron.—This large southern form of the Great Blue Heron was seen on perhaps half a dozen occasions. They were especially noticed about the salt lagunas near the mouth of the Aroya Coloral.

Heródias egretta. Egret.—On December 19 three Egrets were found roosting on trees about two miles up the Rio Grande River from Brownsville. These were the only ones seen during the entire period.

Dichromanassa rufescens. Reddish Egret.—Reddish Egrets were seen on the shores and about the salt water marshes at Point Isabel the last week in November. A few were noted near Moro Island, December 20.

Nycticorax nycticorax naevius. Black-crowned Night Heron.—Eight Black-crowned Night Herons were seen at Resaca de la Palma, December 17. They were roosting in trees near the water at the time they were disturbed.

Grus americana. Whooping Crane.—On December 23 as guest of Richard M. Kleberg, in charge of Laureles Ranch, east of Kingsville, I had the great pleasure of seeing four specimens of the Whooping Crane (*The Auk*, July 1922, p. 412). Mr. Kleberg informs me that they have been coming to the coastal prairies of his ranch for a number of years, but that during the past sixteen years he had not seen more than eight during any one season.

Grus mexicana. Sandhill Crane.—Sandhill Cranes were extremely abundant on the King Ranch. They were to be met with almost any place on the coastal prairies as well as open places in the cactus territories and the prairies farther West. They are usually seen in flocks ranging from 10 to 25 individuals. In driving with Mr. Kleberg from Laureles to Kingsville on the afternoon of December 22, at least two dozen flocks of these birds were seen flying in a southerly direction. Mr. Kleberg explained they were going to a favorite roosting place about ten miles to the southward.

Fulica americana. Coot.—In the resaca pond at Fort Brown in Brownsville 200 or 300 Ducks of various species were finding sanctuary on December 21. Swimming among them or resting on the shore were Coots to the number of 14. No others were discovered.

Recurvirostra americana. Avocet.—A few miles west of Laureles ranch-house in a little salt water bay large numbers of water fowl were found on the morning of December 23. Among these was a flock of over 30 Avocets. They entertained us by continually flying here and there over the water and surrounding shore-lines. The species was not seen again.

Himántopus mexicanus. Black-necked Stilt.—Several Black-necked Stilts were observed about the small sloughs on the coastal prairies of El Sauz Ranch, during the first week in December. Others were seen east of Laureles on December 23.

Gallinago delicáta. Wilson's Snipe.—Along the little ditch scarcely a yard in width that conveys the water from the tank at the El Sauz ranch-house to the pond 200 yards away some Wilson's Snipe were finding what must have been a precarious living during our stay in the neighborhood. We flushed one or more of them here at least six times between November 30 and December 14.

Macrorhamphus griseus scolopáceus. Long-billed Dowitcher.—Two flocks were seen on the beaches near Point Isabel, November 23.

Pisobia minutilla. Least Sandpiper.—Of the small Sandpipers found near Point Isabel December 23-25 only one specimen was taken. This proved to be a Least Sandpiper.

Totanus melanoleúcus. Greater Yellow-legs.—Several specimens were collected at El Sauz in early December. Others were seen about sloughs on the nearby coastal prairies.

Totanus flavipes. Yellow-legs.—This species was taken in December on the shores of the same pond where the Greater Yellow-legs were found at El Sauz.

Catoptrophorus semipalmatus inornatus. Western Willet.—Western Willets were seen at various points on the coastal prairies during our visits in December. It was not an abundant species, only 8 or 9 specimens were discovered.

Numénius americanus. Long-billed Curlew.—On the prairies at many points visited between Point Isabel and Laguna Larga, Long-billed Curlews were found. They were seen flying in flocks varying from 6 to 40. When feeding they would often scatter out so that the company of birds would take wing only a few at a time as the intruder invaded their feeding grounds.

Squatárola squatárola. Black-bellied Plover.—Three Black-bellied Plover were noted at Point Isabel November 23.

Oxyéhus vocíferus. Killdeer.—Not an uncommon species in most of the territories visited.

Podasócy's montánu's. Mountain Plover.—Found only on the prairies about Laguna Larga December 23. Twenty-four individuals were counted, and these were not in flocks, although three or four were generally in the neighborhood of each other.

Colinus virginianus texánu's. Texas Bob-White.—The Texas form of the Bob-White is a very abundant bird on all open reaches of the King Ranch and elsewhere.

Meleagris gellopavo intermé'dia. Rio Grande Turkey.—As guests of Cæsar Kleberg in charge of the southern half of the King Ranch, Mr. Camp and I had the pleasure of motor-ing for two days over much of the territory lying between the ranch-house at Norias and the coast. In the sections of this country where scrub-oak grows, the Rio Grande Wild Turkey was especially plentiful. Many flocks were seen. In all 162 birds were noted December 6 and 7. Nineteen magnificent gobblers were counted in one gang. I am informed by Mr. Camp that Mr. Kleberg, who has protected these Turkeys for a number of years, now estimates that on his portion of the ranch there are between eight thousand and ten thousand birds.

Ortalis vetula mcccálli. Chachalaca.—Accompanied by Mr. Farmer, a local hunter, I visited Resaca de la Palma, also called Noriaga, about eight miles northwest of Brownsville, and camped two nights in the neighborhood of the place where we had found Chachalacas in June, 1921 (*The Auk*, 1921, p. 518). When we awoke at dawn the morning of December 17, a mist hung over the water and obscured from view the trees, 120 yards away across the resaca. We arose at once and while dressing there suddenly broke forth one of the most remarkable demonstrations of bird noises I have ever heard. It seemed that every tree on both sides of the resaca for half a mile was full of Chachalacas all reiterating their peculiar complicated cries with a weird nasal whang like some barbarous jazz orchestra of mammoth proportions. Three of the

birds were secured in quick succession. At the reports of the gun the wild music ceased, and afterwards only an occasional outburst was heard.

It seems that early in the morning and late in the evening these birds come for water. At other times they are generally back in the scrub and cactus, feeding on the red and yellow berries that adorn some of the bushes at this season. The flesh of the Chachalaca is fairly good food, but certainly it cannot be considered the equal of a Pheasant, or Mallard. Although often heard during our three days stay, birds were seen only on two other occasions. They possess a marvelous faculty for keeping out of sight.

Zenaidura macroura carolinensis. Mourning Dove.—Mourning Doves were seen at various points in the country visited, and about the clumps of trees on the coastal prairies they collect in numbers to rest. In riding along we continually flushed them from their perches or from the ground where they were feeding.

Leptotila fulviventris brachyptera. White-fronted Dove.—In the scrubby woods about Resaca de la Palma perhaps a dozen White-fronted Doves were found. At a little distance they reminded one strikingly of the Mourning Dove, but when they flew the difference at once became apparent. With a single exception those found were in pairs. They were always discovered on the ground in wooded places, none being seen on the open fields or prairies.

Chæmepelia passerina palléscens. Mexican Ground Dove.—A few seen on El Sauz Ranch the first week in December.

Scardafella inca. Inca Dove.—Noted in the town of Brownsville.

Cathartes aura septentrionalis. Turkey Vulture.—Fairly common birds, especially back from the coast, but not so numerous as one often finds them in the southeastern states.

Catharista urubu. Black Vulture.—Black Vultures were much in evidence, especially in the neighborhood of the coast where they may be found in flocks feeding on the carcasses of animals. They come much about the watering troughs at the

artesian wells. The ranchmen believing they are responsible for carrying hog cholera annually kill numbers of them. They also destroy Turkey Vultures for the same reason.

Elanus leucúrus. White-tailed Kite.—The morning of December 11 at Nopal Ranch, Camp shot a White-tailed Kite. At the time the bird was resting on a mesquite tree and was holding in its talons a freshly killed rat. This was in a section of the country where cactus and bushes formed a very dense growth.

Circus hudsónius. Marsh Hawk.—Two Marsh Hawks were noted at El Sauz on November 30.

Parabuteo unicinctus harrisi. Harris's Hawk.—The most abundant bird of prey in the cactus country of South Texas is the handsome Harris's Hawk. They were quite sociable at this season and it was not an uncommon sight to find two or three or even four sitting on some tree within a few feet of each other. The pond back of El Sauz ranch-house was a favorite gathering place. Here, late one afternoon, I counted 27 in sight at once. While usually remaining perched in the trees and bushes they would at times alight on the ground near the water and sit in company with the stately Caracaras. None was seen on the prairies.

Buteo borealis subsp. Red-tailed Hawk.—One was studied at close range on El Sauz Ranch on November 30.

Buteo albicaudatus sennetti. Sennett's White-tailed Hawk.—Only one specimen was identified. This was on December 10. While driving with Mr. Camp over the coastal prairies perhaps fifteen miles northeast of Brownsville, one circled about us for several minutes and in its evolutions strikingly displayed the characteristic white tail with its black band. In time the bird arose to a great height and eventually faded into the distance.

Archibuteo ferrugíneus. Ferruginous Rough-leg.—On December 6 Cæsar Kleberg secured with his rifle a handsome specimen of the Ferruginous Rough-leg on the coastal prairie east of Norias. Another was found on the prairies perhaps twenty miles south of this spot two days later.

Falco fúsko-cæruléscens. Aplomado Falcon.—One was taken near Moro Island on December 20. This was at a point about 35 miles almost directly northward from Brownsville. When the bird was discovered it was sitting on a bush in the open country. No others were seen.

Falco sparverius sparverius. Sparrow Hawk.—Not infrequently observed in the open country or about the few fields in the wooded sections.

Polyborus cheriway. Audubon's Caracara.—In travelling through South Texas at any season of the year one quickly becomes accustomed to the sight of these "Mexican Eagles." As a rule they are not particularly shy. They would often sit on the ground near the pond at El Sauz and with but little movement would remain here for hours. With only a slight covering I was able to crawl on more than one occasion to within thirty feet of them while thus engaged. None was seen to exhibit the great physical energy or to execute the aerial evolutions in which they often engaged during the mating season. Caracaras were discovered feeding on a dead duck and a dead snake. On two occasions flocks were seen gathered around the remains of a coyote. I counted 18 at one time standing on the ground near the El Sauz pond. Apparently they came here simply to rest and possibly for the comfort derived from seeing others of their species.

Pandion haliæetus carolinensis. Osprey.—The only Ospreys found were three on Moro Island on December 20. There were no trees here, hence the birds perched either on fishing stakes or alighted on the sand.

Alúco pratíncola. Barn Owl.—One was captured alive at El Sauz early in December.

Asio flámmeus. Short-eared Owl.—One startled from the marsh on an island near Point Isabel November 25.

Strix varia albogilva. Texas Barred Owl.—Two Barred Owls were found in the woodlands bordering Resaca de la Palma December 17. The day was overcast and the Owls were very alert.

Bubo virginianus pallescens. Western Horned Owl.—On December 22 Richard M. Kleberg took me to an oak tree on

Laureles Ranch which he stated was the customary roosting place of two Horned Owls. One of these was found at home. After snapping its bill for a short time it flew from the neighborhood.

Speotyto cunicularia hypogaea. Burrowing Owl.—This bird was not found to be as common as I had been led to suppose. Two were flushed from the mouths of their burrows in the coastal prairie west of Norias on December 6. On December 14 another was seen by its burrow on the prairie to the east of El Sauz. I was told that the birds were living within the corporate limits of the town of Brownsville, but was unable to verify this report. One was brought to New York and was identified by Dr. Frank M. Chapman as being a typical *S. cunicularia hypogaea*.

Geococcyx californianus. Road-runner.—Road-runners were met with commonly, wherever there were bushes or cactus. They were seen especially along the edges of thickets, and in partly overgrown fields or prairies.

Céryle álcyon. Belted Kingfisher.—One seen on the Rio Grande River at Brownsville December 21.

Ceryle americana septentrionalis. Texas Kingfisher.—Three Texas Kingfishers were observed repeatedly about our camp at Resaca de la Palma December 16–18. The squeaky notes of this diminutive Kingfisher were notably different from those of the larger and better known common Kingfisher. They perched on stakes or bushes on or near the water in regulation Kingfisher manner.

Dryobates scalaris bairdi. Texas Woodpecker.—This little black and white spotted Woodpecker, suggesting the Downy in general appearance, was seen almost daily as we travelled about the wooded country.

Centurus carolinus. Red-bellied Woodpecker.—A Red-bellied Woodpecker was brought to me by Mr. Camp at El Sauz early in December. It was the only specimen seen.

Centurus aúrifrons. Golden-fronted Woodpecker.—This is the most common member of the Woodpeckers family in South Texas, although I did not see it in such numbers as

during the spring of 1920 when traversing some of the same sections of country. It is found in the town as well as in the regions of greatest solitude.

Colaptes auratus luteus. Flicker.—On December 10 about five miles directly south of El Sauz ranch-house a Flicker was found perched on a fence post. It permitted close approach. It was the only Flicker I had seen at any time in southern Texas.

Nyctidromus albigollis mérrilli. Merrill's Parauque.—From what I have read of the observations of others I had no idea of finding a Parauque in Texas during the winter, and yet it was seen and heard on many occasions. No less than five were calling within hearing at one time as we lay in camp at Resaca de la Palma. I found feathers of one that had been killed near the ranch-house at El Sauz and while running in an automobile at night on two occasions near here the auto light revealed the eyes of one of these birds as it sat in the road. Only one eye at a time was ever visible under these circumstances. To those accustomed to thinking of Goat-suckers as giving cries similar to the Whip-poor-will and Chuck-will's widow, the sounds produced by this species appear even more unbird-like than the frog-like cry of the Nightjar of western Europe. These birds were seen as late as December 18, but none were noted north of El Sauz.

Muscivora forficata. Scissor-tailed Flycatcher.—This bird so abundant in South Texas in summer was not found in numbers at this time of year. Only two were seen and these were near Brownsville the evening of December 18.

Pitangus sulphuratus derbiánus. Derby Flycatcher.—A common bird at Resaca de la Palma, where several specimens were noted December 16-18.

Sayornis phæbe. Phæbe.—Several times Phæbes were supposed to have been seen and Mr. Camp collected one at El Sauz December 5.

Sayornis sayus. Say's Phæbe.—Say's Phæbe is a common bird in the more open places on the southern half of the King Ranch. A specimen taken by Camp on December 6 was preserved.

Myiochanes virens. Wood Pewee.—One was taken at El Sauz December 7. Others were noted.

Xanthoura luxuosa glaucéscens. Green Jay.—Abundant resident. Especially common in the bushes along ponds or resacas.

Molothrus ater ater. Cowbird.—A flock of Cowbirds accompanied by a few Red-winged Blackbirds alighted in a tree close to the ranch-house at El Sauz on December 3. Other Cowbirds supposed to be this species were seen at various places.

Molothrus ater obscurus. Dwarf Cowbird.—Large flocks of Dwarf Cowbirds were found between Kingsville and the Laureles Ranch December 23.

Agelaius phœniceus richmondi. Vera Cruz Red-wing.—Not uncommon at Point Isabel November 25 and 26. Also noted at other places.

Sturnella neglecta. Western Meadowlark.—Great numbers of Meadowlarks were encountered in the fields and on the prairies in all the counties visited, which were presumably this species.

Megaquiscalus major macroúrus. Great-tailed Grackle.—A common bird in suitable localities on and near the Laguna Madre.

Passerculus sandwichensis savánna. Savannah Sparrow.—Two Savannah Sparrows were collected by Camp at El Sauz December 12.

Spizella pallida. Clay-colored Sparrow.—One taken at El Sauz on December 12.

Spizella pusilla arenácea. Western Field Sparrow.—A Field Sparrow was taken at El Sauz on December 12, and identified later by Waldron DeWitt Miller, as the western race.

Zonotrichia leucophrys leucophrys. White-crowned Sparrow.—Found at Nopal Ranch, also at El Sauz.

Junco hyemalis hyemalis. Slate-colored Junco.—On December 9 three Slate-colored Juncos appeared in the little yard in front of the ranch-house at Norias where they remained for some time. None was seen elsewhere.

Amphispiza bilineata bilineata. Black-throated Sparrow.—Often seen about Point Isabel and El Sauz.

Cardinalis cardinalis canicaudus. Gray-tailed Cardinal.—Seen at various times throughout the territories visited.

Pyrrhuloxia sinuata texana. Texas Pyrrhuloxia.—Noted at El Sauz December 1 and 2.

Bombycilla cedrorum. Cedar Waxwing.—A flock was seen at Brownsville November 24 and another at El Sauz December 4.

Lanius ludovicianus excubitorides. White-rumped Shrike.—Two observed near Point Isabel December 4, and others seen later east of Norias.

Vermivora celata celata. Orange-crowned Warbler.—One found in bushes on the coastal prairie of Willacy County December 14.

Dendroica coronata. Myrtle Warbler.—Several found at El Sauz December 1–4. Also noted elsewhere.

Oreoscoptes montanus. Sage Thrasher.—One found at Nopal Ranch on December 11.

Mimus polyglottos leucópterus. Western Mockingbird.—Not very abundant, and yet a common bird in all the places where field observations were made.

Toxostoma longirostre sennetti. Sennett's Thrasher.—Three were seen on the Nopal Ranch December 11.

Toxostoma curvirostre curvirostre. Curve-billed Thrasher.—A common bird frequently found in the various places visited.

Heleodytes brunneicapillus couesi. Cactus Wren.—Observed in the cactus country at El Sauz December 3. Four birds were noted on this date. No others were observed.

Thryomanes bewicki cryptus. Texas Wren.—One seen in a brush pile at El Sauz Ranch December 2.

Bæolophus atricristatus atricristatus. Black-crested Titmouse.—A common resident bird in the wooded country and about towns.

Regulus calendula calendula. Ruby-crowned Kinglet.—One taken by Camp at El Sauz December 11.

Polioptila cærulea cærulea. Blue-gray Gnatcatcher.—Seen at various points on the King Ranch.

Hylocichla guttata pállasi. Hermit Thrush.—December 18 a Hermit Thrush was observed at close range at Resaca de la Palma.

Planesticus migratorius migratorius. Robin.—Thirty or forty Robins were found feeding in the scrub near the coastal prairie east of Norias on December 6. No others were seen.

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ABSTRACT
OF THE PROCEEDINGS OF THE
LINNAEAN SOCIETY
OF
NEW YORK

For the Two Years Ending
March 23, 1926

CONTAINING

**The Observations of the Late Eugene P. Bicknell
at Riverdale, New York City, Fifty Years Ago**

By Ludlow Griscom

**A Detailed Report on the Bird Life of
the Greater Bronx Region**

By John F. Kuerzi

Birds of Prospect Park, Brooklyn

By Lester L. Walsh

**Constitution and By-Laws of Linnaean
Society of New York**

Date of Issue, May 15, 1927

ABSTRACT

OF THE PROCEEDINGS OF THE

LINNÆAN SOCIETY

OF

NEW YORK

FOR THE TWO YEARS ENDING MARCH 23, 1926

The present *Abstract* closes volumes 37 and 38 of the *Proceedings* of the Society, and is prepared mainly as a brief review of the work of the Society during the two years preceding the date indicated above. The great increase in field work by members in recent years has made it necessary to eliminate an account of most of the more formal business transacted by the Society, and to print only the records of more general or special interest.

March 25, 1924.—Seventeen members and thirty-one guests.

Mr. Hix reported among birds seen at Pelham Park on March 8th, a female Canvasback (*Marila valisineria*), and 10,000 Scaup (*Marila sp.?*); at Long Beach March 19th, a full plumaged Horned Grebe (*Colymbus auritus*) among 40 seen; on March 23rd in the Englewood region a Rough-legged Hawk (*Archibuteo lagopus sanctijohannis*), and a Great Horned Owl (*Bubo v. virginianus*).

Mr. L. N. Nichols reported a Cardinal (*Cardinalis c. cardinalis*) at Scarsdale on March 10th.

Mr. Nathan reported a strange bird in City Hall Park which Mr. Rogers had also seen and identified as a European Chaffinch (*Fringilla coelebs*), undoubtedly an escape. Mr. Nathan also reported a Ruddy Duck (*Erismatura jamaicensis*), and two Bonaparte's Gulls (*Larus philadelphia*) on New York Bay, February 2nd.

Mr. H. E. Riegenbach in Central Park had seen six Bluebirds (*Sialia s. sialis*) on March 19th and a Swamp Sparrow (*Melospiza georgiana*) March 25th.

Mr. Urner reported Canvasbacks (*Marila valisineria*) still present

on Newark Bay on March 22nd, the species having been seen there regularly since late January.

Mr. C. H. Rogers of Princeton University then entertained the Society with an interesting account of a collecting trip with Dr. Chapin during the summer of 1923, through parts of Haiti, the Panama Canal Zone and to Galera Island, one of the Pearl group. He described a number of birds of this region, supplementing his remarks with many excellent slides, representing his own and Dr. Chapin's photography. On Galera Island an extensive bird colony was visited. Boobies (*Sula etesiaca*) and Man-o-war-birds (*Fregata aquila*) made up the bulk of the avifauna.

April 8, 1924.—Eighteen members and thirteen guests.

Mr. Hix reported fifty Pintails (*Dafila acuta*), twenty-five Golden-eyes (*Clangula c. americana*), and two Great Blue Herons (*Ardea h. herodias*), among birds seen on Overpeck Creek, March 30th. Among birds seen at Long Beach, April 2nd, 2,100 Red-breasted Mergansers (*Mergus serrator*) and six Piping Plover (*Ægialitis meloda*). Ducks he found abundant.

Mr. Pangburn reported a Great Horned Owl (*Bubo v. virginianus*) in Bronx Park January 1st, and a Long-billed Marsh Wren (*Telmato-dytes p. palustris*) on April 6th.

Mr. Carter reported two new first records from the Boonton Reservoir on April 6th, two Canvasbacks (*Marila valisineria*) and thirty-seven Snow Geese, the latter presumably Greaters (*Chen h. nivalis*), seen on a trip with Mr. F. E. Watson.

Mr. Marks reported a Chipping Sparrow (*Spizella p. passerina*) March 30th from Arlington, N. J.

Mr. J. T. Nichols for J. H. Baker reported a Barred Owl (*Strix v. varia*) in Central Park on April 6th and a Horned Grebe (*Colymbus auritus*) on the Central Park Reservoir February 10th.

Mr. L. N. Nichols reported a white gull, probably a Glaucous (*Larus hyperboreus*), on Eastchester Bay, March 31st with three uniformly colored immature birds of same size; also a Great Black-backed Gull (*Larus marinus*), same locality, same date, a new late record for that region, and twenty Canvasbacks (*Marila valisineria*), also a new late Bronx record.

The paper of the evening was by President J. T. Nichols who took up for consideration the question of extending the field work in the New York City region by compiling data to determine increases

or decreases of bird population from year to year, and to increase our knowledge of the bird life of the least known districts. Among other points he suggested (1) a census of spring transients for each member's chosen section, covering roughly the period March 15th to June 1st; (2) a census of summer residents (starred when actually found breeding) June 1st to July 15th; (3) south bound transients July 15th to December 1st; (4) wintering birds, December 1st to March 15th.

April 22, 1924.—Nineteen members and twenty-two guests.

The following new members were elected: Professor Will. S. Monroe, Montclair, N. J.; Mr. Roy Curtiss, New York City; Mr. W. D. Holgate, New York City; Mrs. Rena H. Holgate, New York City.

Mr. Capen reported in Central Park two Blue-gray Gnatcatchers (*Polioptila c. cærulea*) on April 20th and Red-winged Blackbird (*Agelaius p. phæniceus*) April 2nd.

Mr. Crosby reported a Carolina Wren (*Thyrothorus l. ludovicianus*) at Barrytown, N. Y., March 4th. Migration was generally late, though he recorded a Rough-winged Swallow (*Stelgidopteryx serripennis*) April 14th and three Ring-necked Ducks (*Marila collaris*) at Kruger's Island, April 5th.

Among the Central Park records submitted by the Junior Branch of the Society were Black-throated Green Warbler (*Dendroica virens*), April 19th, one Tree Swallow (*Iridoprocne bicolor*), April 15th, two Vesper Sparrows (*Poæcetes g. gramineus*) April 11th.

Mr. Nathan found a Rough-winged Swallow (*Stelgidopteryx serripennis*) in Bronx Park, April 12th.

Mr. L. N. Nichols reported a Black and White Warbler (*Mniotilta varia*) in Bronx Park, April 13th and 14th, the earliest records for the New York Region.

Mr. Helmuth reported a Little Blue Heron (*Florida cærulea*), April 21st, and Indigo Bunting (*Passerina cyanea*) at Easthampton, Long Island, April 20th.

Among the birds seen at Long Beach, April 13th, by Mr. Hix were 160 Double-crested Cormorants (*Phalacrocorax a. auritus*) in a single flock, and a Glaucous Gull (*Larus hyperboreus*).

Mr. Carter, with Mr. Howland and Mr. Cleaves, reported a flock of Bonaparte's Gulls (*Larus philadelphia*) and a Coot (*Fulica americana*) on the Boonton, N. J., Reservoir, April 19th, both new records for the region. With Mr. Urner at Barnegat, April 13th, he had seen

63 species including an albino Brant (*Branta b. glaucogastra*), an American Egret (*Herodias egretta*), a Kittiwake (*Rissa t. tridactyla*), two large flocks of Double-crested Cormorants (*Phalacrocorax a. auritus*), a white gull, which on the basis of size comparison with a Herring Gull, was identified as an Iceland (*Larus leucopterus*), and a Raven (*Corvus c. principalis*), the latter bird seen to good advantage in direct comparison with an attacking crow, its characteristic flight and wedge-shaped tail being noted. Flocks of migrating Canada Geese (*Branta c. canadensis*) left the bay taking a north-easterly direction over the ocean, evidently bound for the easterly end of Long Island.

The remainder of the evening was devoted to a discussion of progress in bird banding, led by Mr. Howard H. Cleaves.

May 13, 1924.—Nineteen members and sixty-five guests.

Mr. Williams reported a Chestnut-sided (*Dendroica pensylvanica*) and Hooded Warbler (*Wilsonia citrina*) at Englewood, N. J., on May 3rd—new early records for that locality.

Dr. Janvrin reported one late Englewood record—an Old-squaw (*Harelda hyemalis*) on Overpeck Creek, April 27th, and a Yellow Warbler (*Dendroica æ. æstiva*) in the Bronx on May 3rd—early for that locality.

New early locality records reported by Mr. Hix were: for Englewood, Black-billed Cuckoo (*Coccyzus erythrophthalmus*), May 3rd; for Bronx Park, Cape May Warbler (*Dendroica tigrina*), May 10th. He also reported a Pigeon Hawk (*Falco c. columbarius*) at Long Beach, May 4th, and a Mourning Dove (*Zenaidura m. carolinensis*) in Central Park, May 13th.

The Junior Branch of the Society reported a Whip-poor-will (*Antrostomus v. vociferus*) and Bittern (*Botaurus lentiginosus*) in Central Park, May 3rd and 13th respectively.

Mr. L. N. Nichols reported a number of new early locality records as follows:

Englewood, N. J., Whip-poor-will (*Antrostomus v. vociferus*), April 27th; Van Cortlandt Park, Redstart (*Setophaga ruticilla*) and Spotted Sandpiper (*Actitis macularia*), April 28th; Bronx, Kingbird (*Tyrannus tyrannus*), May 2nd (earliest for locality since 1879); Rose-breasted Grosbeak (*Zamelodia ludoviciana*), May 5th; Scarlet Tanager (*Piranga erythromelas*), and Nashville Warbler (*Vermivora r. rubricapilla*), May 6th. Mr. Nichols also reported two late locality records: Eastchester Bay, Hermit Thrush (*Hylocichla g. pallasi*), May

5th; Bronx, Golden-crowned Kinglet (*Regulus s. satrapa*), May 2nd.

Mr. Urner reported a Blue-gray Gnatcatcher (*Polioptila c. cærulea*) at Elizabeth, N. J., May 11th. With Mr. Crosby at Brick-yard Swamp near Poughkeepsie a Wilson's Snipe (*Gallinago delicata*) had been heard calling and towering on April 26th.

Mr. Matuszewski sent a report of an Indigo Bunting (*Passerina cyanea*) in Bronx Park, April 30th.

The Society and guests were entertained by William C. Wheeler who gave excellent imitations of a large number of calls and songs of our commoner native birds.

May 27, 1924.—Eighteen members and twenty-two guests.

Dr. Frank R. Oastler of 170 West 59th Street, New York City, was elected a member of the Society.

Messrs. L. O. Williams and F. E. Smith reported a Northern Phalarope (*Lobipes lobatus*) found dead at Long Beach, May 25th.

Messrs. F. T. Smith and William T. Helmuth reported a Gray-cheeked Thrush (*Hylocichla a. aliciae*) at Central Park, May 6th, a new early locality record.

Mr. J. H. Baker reported a Ruby-throated Hummingbird (*Archilochus colubris*) at Long Beach, May 25th, and on May 18th, with Mr. Carter at Boonton, two Turkey Vultures (*Cathartes a. septentrionalis*) and one Bald Eagle (*Haliaeetus l. leucocephalus*).

Mr. L. N. Nichols at Long Beach, May 26th, had seen large numbers of shore birds, among them three Dowitchers (*Macrorhamphus g. griseus*), forty Knots (*Tringa canutus*), twenty Red-backed Sandpipers (*Pelidna a. sakhalina*), one Western Sandpiper (*Ereunetes mauri*), one hundred and sixty Black-bellied Plover (*Squatarola squatarola*) and two hundred Turnstones (*Arenaria i. morinella*).

Mr. Marks reported a Red-headed Woodpecker (*Melanerpes erythrocephalus*) at Arlington, N. J., May 18th.

The Junior Branch of the Society reported a Ruby-crowned Kinglet (*Regulus c. calendula*) from Central Park, May 23rd, a new late locality record.

Mr. M. S. Crosby reported the following records from Dutchess County: Cerulean Warblers (*Dendroica cerulea*) as common as previous year; a Prairie Warbler (*Dendroica discolor*) at Pine Plains, May 18th; a female Bufflehead (*Charitonetta albeola*) at Annandale, May 25th; a Sanderling (*Calidris leucophæa*) at Pine Plains, May 26th. He noted practically no migration between May 6th and May

25th but a large late flight May 25th and 26th, when flycatchers, especially Yellow-bellied (*Empidonax flaviventris*), all swallows and thrushes were exceedingly common. He reported Double-crested Cormorants (*Phalacrocorax a. auritus*) on the Hudson, May 27th.

Mr. G. E. Hix confirmed the scarcity of land-bird migrants during mid-May. At Millington, N. J., on May 17th-18th he had found them almost totally absent. He had also visited Long Beach on May 25th and reported large numbers of shore-birds, his records including eleven species, among them the White-rumped Sandpiper (*Pisobia fuscicollis*).

Mrs. Mead reported a Carolina Wren (*Thryothorus l. ludovicianus*) at Bronx Park, May 25th.

Mr. John Matuszewski saw Kingbird (*Tyrannus tyrannus*) and a Cedar Waxwing (*Bombycilla cedrorum*) in the Bronx Region on May 1st. He stated that collectors from the New York Zoological Park had told him that they were attempting to capture some of the Bobolinks (*Dolichonyx oryzivorus*) which survive in a colony on Hunters Island, and in the meadow in front of Pelham Mansion. It was decided by the Society to address a memorandum to the New York Zoological Society protesting against Bobolink trapping.

Mr. Hasbrouck read a list of birds seen by himself and Mr. Cleaves in Putnam County on May 10th. He also reported a Blue-gray Gnatcatcher (*Polioptila c. cærulea*) in Van Cortlandt Park, April 27th.

Mr. Nathan reported from the Bronx a Black-throated Blue Warbler (*Dendroica c. cærulescens*) on May 1st, and a Hooded Warbler (*Wilsonia citrina*) on May 3rd.

Messrs. J. and R. Kuerzi reported a female Hooded Merganser (*Lophodytes cucullatus*) on Overpeck Creek, N. J., April 5th, and a male Golden-eye (*Clangula americana*) same place, April 12th, a new late locality record. From Moravian Cemetery, Staten Island, they reported two Cardinals (*Cardinalis c. cardinalis*) and two Purple Martins (*Progne s. subis*) on April 21st and the same day along the bay shore of the island a Spotted Sandpiper (*Actitis macularia*) and a Laughing Gull (*Larus atricilla*), the latter a new early record for the spring migration in the New York City Region.

At Van Cortlandt Park they recorded a Sora Rail (*Porzana carolina*), April 22nd to May 3rd, a Blue-gray Gnatcatcher (*Polioptila c. cærulea*), April 25th, and seven Least Sandpipers (*Pisobia minutilla*) below the Park on May 3rd.

They reported Florida Gallinules (*Gallinula galeata*) in a swamp at Hunts Point, May 4th and in same locality a Lesser Yellow-leg (*Totanus flavipes*), May 19th; thirty Bonaparte's Gulls (*Larus philadelphia*), May 4th, and one Wilson's Snipe (*Gallinago delicata*) and one Red-headed Woodpecker (*Melanerpes erythrocephalus*), May 11th.

From Botanical Gardens, they reported Indigo Bunting (*Passerina cyanea*), April 30th; Cape May Warbler (*Dendroica tigrina*), May 7th.

At Grassy Sprain Reservoir on May 25th, a Brewster's Warbler (*Vermivora pinus* \times *V. chrysoptera*) and over Hillview Reservoir an adult Cliff Swallow (*Petrochelidon l. lunifrons*).

Mr. Urner had visited Barnegat Bay, May 25th, and contrasted the relative scarcity of shore-birds there found with the large numbers reported from Long Beach on same day by Messrs. Hix and Nichols.

October 14, 1924.—Nineteen members and twenty-three guests.

Messrs. Henry Crane Hasbrouck, John W. Ingle, Jr., and John H. Baker were elected active members.

President J. T. Nichols spoke of the number of interesting activities of the Linnæan Society which have culminated outside the Society, and he cited as recent instances Mr. Griscom's book on "Birds of the New York City Region," issued by the Museum, Mr. Griscom then acting as chairman of the Society's Committee on Local Avifauna; also the first bulletin of the Eastern Bird Banding Association, just on the press.

The evening was devoted to the presentation of summer field notes by members.

Mr. Hix in the Newton, N. J., marshes in June had found two pairs of Florida Gallinule (*Gallinula galeata*), two pairs of Sora Rail (*Porzana carolina*) and one pair of Black Ducks (*Anas rubripes*). Both Long-billed (*Telmatodytes p. palustris*) and Short-billed Marsh Wren (*Cistothorus stellaris*) were present. In the surrounding country he found Bobolinks (*Dolichonyx oryzivorus*) increasing. He had found all three species of scoters present all summer at Long Beach, and on July 15th a Solitary Sandpiper (*Helodromas s. solitarius*) and a Least Sandpiper (*Pisobia minutilla*). At Long Beach August 17th, he had seen three Least Terns (*Sterna antillarum*) and on October 5th one Black Skimmer (*Rynchops nigra*) and an Acadian Sharp-tailed Sparrow (*Passerherbulus n. subvirgatus*). In the Dead

River Region (N. J.) he had seen two Henslow's Sparrows (*Passerherbulus h. henslowi*), October 11th and on October 13th a Palm Warbler (*Dendroica p. palmarum*) and Turkey Vulture (*Cathartes aura septentrionalis*).

Dr. Janvrin reported on a trip made June 1, 1924, to Long Beach, Long Island, with Messrs Ord Meyers and C. H. Rogers, one immature King Eider (*Somateria spectabilis*), one Clapper Rail (*Rallus c. crepitans*) on nest, one Knot (*Tringa canutus*), two Red-backed Sandpipers (*Pelidna a. sakhalina*) and fifteen Piping Plover (*Ægialitis meloda*), the nest of the latter being found at the Point. On June 8th at Long Beach, he had seen the King Eider (*Somateria spectabilis*), presumably the same bird; also the Clapper Rail (*Rallus c. crepitans*) on nest with eleven eggs.

Mr. Pangburn reported Brewster's Warblers (*Vermivora pinus* × *V. chrysoptera*) at Chappaqua, Westchester County, N. Y., and one adult Lawrence's Warbler (*Vermivora "lawrenci"*) with three young which seemed to be typical Blue-winged Warblers (*Vermivora pinus*). The other parent was not found. He reported the Hermit Thrush (*Hylocichla g. pallasi*) nesting in Westchester County.

Mr. Crosby reported a Laughing Gull (*Larus atricilla*) seen opposite Cornwall, N. Y. He also reported two new nesting records for Dutchess County—Slate-colored Junco (*Junco h. hyemalis*) and Prairie Warbler (*Dendroica discolor*); also nests of Hermit Thrush (*Hylocichla g. pallasi*) and Sharp-shinned Hawk (*Accipiter velox*) found this year.

Mr. Carter reported that a pair of Prothonotory Warblers (*Protonotaria citrea*) has been found nesting between Pine Brook and North Caldwell, N. J., on June 30th, 1924, by Rev. W. D. Quattlebaum of East Orange, and that he and Mr. Howland had visited the spot July 5th. He succeeded in banding two young. The young were still being fed July 9th.

Mr. Baker reported a Yellow Palm Warbler (*Dendroica palmarum hypochrysea*) on September 13th in Bronx Botanical Gardens. On September 14th on a pond near Englewood he reported a female Golden-eye (*Clangula c. americana*) and at Long Beach, October 13th, with J. T. Nichols, a Wilson's Snipe (*Gallinago delicata*) and Pine Siskin (*Spinus pinus*), three Palm Warblers (*Dendroica p. palmarum*) and one Piping Plover (*Ægialitis meloda*).

Mr. L. N. Nichols at Baychester Marshes had found on July 24th, an Alder Flycatcher (*Empidonax trailli alnorum*), adult and immature,

and an Orchard Oriole (*Icterus spurius*), latter a new late Bronx record. He referred to the large numbers of shore birds seen at Hunts Point the past season, his August 4th list including 2 Stilt Sandpipers (*Micropalama himantopus*), 3 Willet (*Catoptrophorus s. semipalmatus*) and one Turnstone (*Arenaria i. morinella*). He had also seen on August 4th at Hunts Point a Red-headed Woodpecker (*Melanerpes erythrocephalus*) and Migrant Shrike (*Lanius ludovicianus migrans*).

At Bronx Park, October 12th he reported an Olive-backed Thrush (*Hylocichla ustulata swainsoni*).

Mr. Hickey also reported a large number of interesting shore-bird records for Hunts Point and among other records the occurrence there the past summer of the Little Blue Heron (*Florida cærulea*).

Mr. Frank E. Johnson read a list of birds observed by him at Prince Edward Island in 1924. He reported the Golden Plover (*Charadrius d. dominicus*) fairly abundant and increasing.

Mr. J. T. Nichols also referred to an increase of Golden Plover (*Charadrius d. dominicus*) this fall on Eastern Long Island.

Mr. Boulton reported on a trip made early in July to Virginia with Messrs. Griscom, Weber and Urner. Messrs. Griscom and Weber had visited the Dismal Swamp and collected the Swainson's Warbler (*Helinaia swainsoni*). At Cobb's Island and vicinity the party had found Forster's Terns (*Sterna forsteri*) well established on the inner marshes and on the outer islands breeding Gull-billed Terns (*Gelochelidon nilotica*), Least Terns (*Sterna antillarum*) and Common Terns (*Sterna hirundo*), large colonies of Black Skimmers (*Rynchops nigra*) and about ten pairs of Oyster-catchers (*Hæmatopus palliatus*), three or four pairs of Willet (*Catoptrophorus s. semipalmatus*) and one pair of Wilson's Plover (*Ochthodromus wilsonius*).

At Jones Beach, Long Island, August 2nd and 3rd, he reported Cory's Shearwater (*Puffinus borealis*) and Pomarine Jaeger (*Stercorarius pomarinus*).

Mr. Urner reported from Elizabeth, N. J., one Roseate Tern (*Sterna dougalli*), September 21st, and eight Double-crested Cormorants (*Phalacrocorax a. auritus*), October 11th, two new locality records; Little Blue Herons (*Florida cærulea*), August 7th to September 3rd; Upland Plover (*Bartramia longicauda*), August 14th to September 3rd; Golden Plover (*Charadrius d. dominicus*), more plentiful from September 28th to October 3rd; maximum 24; Olive-sided Flycatcher (*Nuttallornis borealis*), August 29th, and two pairs of Hooded

Warblers (*Wilsonia citrina*) nesting near Milburn, N. J. He reported a number of records from Barnegat Bay, N. J., and mentioned an enormous aggregation of Monarch Butterflies on the outer strip of the Bay, September 14th.

October 28, 1924.—Twenty-four members and twenty-six guests. The following new members were elected:

Messrs. John Kuerzi, 978 Woodycrest Ave., New York; John Matuszewski, 136 West 16th St., New York; Bernard Nathan, 539 51st St., Brooklyn, N. Y.; Joseph Hickey, 960 Hunters Point Ave., New York; Warren F. Eaton, 66 Worth St., New York; Mrs. M. H. Green, 234 Central Park West, New York; and Roland Jackson Hunter, 636 High St., Newark, N. J.

Mr. Nathan, in the marsh at Dyker Heights, Brooklyn, the past summer had found a large number of water birds: breeders were Virginia Rail (*Rallus virginianus*), Sora (*Porzana carolina*), Florida Gallinule (*Gallinula galeata*), American Coot (*Fulica americana*), American Bittern (*Botaurus lentiginosus*), Least Bittern (*Ixobrychus exilis*), Green Heron (*Butorides v. virescens*) and Black Duck (*Anas rubripes*). He also reported a King Rail (*Rallus elegans*) but no nest found; the Least Bittern as late as September 29, 1924. At Prospect Park, Brooklyn, October 13th, he had seen a Carolina Wren (*Thryothorus l. ludovicanus*).

Mrs. Mead reported a Cowbird (*Molothrus a. ater*) in Central Park, October 8th.

Mr. Chubb had visited Plaattekill in the Catskills, October 17th-20th, and had found Ruffed Grouse (*Bonasa u. umbellus*) common and one Solitary Vireo (*Lanivireo s. solitarius*). He had also come across a Black Bear (*Euarctos americanus*) in the woods. At Greendale, October 22nd, he had seen great numbers of ducks in the Hudson.

Mr. L. N. Nichols reported a Fish Hawk (*Pandion haliaetus carolinensis*) as late as October 28th at Lake Agassiz in the Bronx, and a Wood Thrush (*Hylocichla mustelina*) on October 27th in Bronx Park, also a Pied-billed Grebe (*Podilymbus podiceps*) on Long Pond, Bronx, October 27th.

Mr. Crosby reported from Dutchess County a White-crowned Sparrow (*Zonotrichia l. leucophrys*), October 16th; American Scoter (*Oidemia americana*), October 17th; White-winged Scoter (*Oidemia deglandi*) and Ruddy Duck (*Erismatura jamaicensis*), October 17th; Holboell's Grebe (*Colymbus holbælli*) and Horned Grebe (*Colymbus*

auritus), October 18th; Gadwall (*Chaulelasmus streperus*), October 18th; Red-throated Loon (*Gavia stellata*) 8 seen, October 19th; Red-head (*Marila americana*) and Canvasback (*Marila valisineria*), October 20th.

Mr. Crosby had seen a flock of Red-throated Loons (*Gavia stellata*) flying north and Mr. J. T. Nichols remarked on the frequent observations of northward-flying flocks in certain localities during the normal southward fall migration, a phenomenon which he sought to explain as dispersal from a branch of the main migration stream.

Mr. Hickey reported a number of interesting records from Hunts Point. He had seen a Double-crested Cormorant (*Phalacrocorax a. auritus*), October 15th; White-rumped Sandpiper (*Pisobia fuscicollis*), October 23rd; Bonaparte's Gull (*Larus philadelphia*), October 15th; Pectoral Sandpiper (*Pisobia maculata*), October 25th; Greater Yellow-legs (*Totanus melanoleucus*), October 24th; Lesser Yellow-legs (*Totanus flavipes*), October 18th; Semipalmated Sandpiper (*Ereunetes pusillus*), October 19th, and Red-backed Sandpiper (*Pelidna alpina sakhalina*), October 18th. Large numbers of shore birds had been seen in that marsh during the summer, his records including a Wilson's Phalarope (*Steganopus tricolor*) reported seen September 21st. He had found Florida Gallinule (*Gallinula galeata*) and Virginia Rail (*Rallus virginianus*) breeding and Sora (*Porzana carolina*), July 29th to August 8th.

Mr. Matuszewski reported a Barred Owl (*Strix v. varia*) in Washington Square Park in October.

The paper of the evening was by Mr. B. S. Bowdish, his subject being "Some Ornithological Items." Mr. Bowdish entertained his hearers in his usual happy manner with a series of bird pictures from his own camera, glimpses of a long and prolific experience in the field.

November 15, 1924.—Eighteen members and eighty-four guests. Mr. Lester L. Walsh was re-elected to membership.

The paper of the evening was by Mr. Fritz Johansen, on the "Flora and Fauna of Northern Canada." Mr. Johansen had accompanied the Steffansen Expedition in 1913. He was a member of the Southern party which left the Northern party at Nome, surveying the delta of the McKenzie River and then journeyed to the Copper Mine River country where they lived for two years with the Eskimos. Mr. Johansen had concerned himself chiefly with a study of the botany, insects and fish life of the region. He showed many interesting pictures of

the showy and profusely blossoming plants of the region, one of which, the Arctic Pea, found in limestone soil, is used as food by the Eskimos, both seeds and roots being eaten. The life of the Eskimos, their dwellings, habits of dress and sources of food supply, were well shown in picture, and the extent of the mosquito plague which the Arctic summer brings was vividly portrayed. One photograph showed a female Pacific Eider (*Somateria v. nigra*) on a nest in a barren, rocky tract, its color harmonizing perfectly with its surroundings. Mr. Johansen also briefly described a collecting trip up the Moose River and the east coast of Hudson Bay, where he found bird life scarce.

The following records were submitted in a memorandum by Messrs. John and Richard Kuerzi:

Oakwood Beach, Staten Island: 8 Willet (*Catoptrophorus s. semipalmatus*), August 10th, 1 on August 18th; 2 Roseate Terns (*Sterna dougalli*), August 18th and 20th.

Bronx Region: 1 Barn Owl (*Aluco pratincola*) at Hunts Point, August 13; 1 in Bronx Park, November 4th. Stilt Sandpiper (*Micropalma himantopus*), August 19th, 21st, 28th and September 21st. Black Skimmer (*Rynchops nigra*) at Hunts Point, September 14th. Golden Plover (*Charadrius d. dominicus*), 2 at Hunts Point September 14th. Yellow Palm Warbler (*Dendroica palmarum hypochrysea*) at Bronx Park, September 16. Wilson's Phalarope (*Steganopus tricolor*) reported at Botanical Gardens, September 21st. Double-crested Cormorant (*Phalacrocorax a. auritus*) at Hunts Point, October 15th. (First record for Bronx County.) Pectoral Sandpiper (*Pisobia maculata*) at Hunts Point, October 22nd. Semipalmated Sandpiper (*Ereunetes pusillus*), 3 at Hunts Point, October 22nd. Least Sandpiper (*Pisobia minutilla*), 1 at Hunts Point, October 22nd. Long-eared Owl (*Asio wilsonianus*), at Bronx Park, October 22nd and 25th, and November 11th. Black-bellied Plover (*Squatarola squatarola*), at Hunts Point, October 29th. Prairie Horned Lark (*Otocoris alpestris praticola*), at Van Cortlandt Park, November 2nd. At Tibbets Brook Park, November 2nd, 25 Bob-white (*Colinus v. virginianus*).

Englewood Region: Green Heron (*Butorides v. virescens*), September 28th.

Hudson River: Spotted Sandpiper (*Actitis macularia*) at Indian Point, October 18th.

East slope of the Palisades on November 1st, a Red-eyed Vireo (*Vireosylva olivacea*) and several Blackpoll Warblers (*Dendroica striata*).

November 29, 1924.—Twenty-five members and 25 guests.

Mr. Hix reported a Brown Thrasher (*Toxostoma rufum*) at 31st Street, New York City, November 8th.

Mr. Capen reported 2 Redstarts (*Setophaga ruticilla*) in Central Park, November 9th.

Mr. Griscom reported for Mr. Johnston a Ruddy Duck (*Eris-matura jamaicensis*) in Central Park, November 24th.

Mr. Walsh had seen a Green-winged Teal (*Nettion carolinense*) in Prospect Park, Brooklyn, November 21st.

Mr. Crosby reported 22 Old-squaws (*Harelda hyemalis*) at Barrytown, on the Hudson, November 5th, and 1 on November 21st.

Mr. Baker had seen a Knot (*Tringa canutus*) at Long Beach, November 4th.

Mr. Ogburn reported an American Egret (*Herodias egretta*) at Katonah, N. Y., during part of the summer of 1924.

Mr. Kassoy with other observers had found the Short-eared Owl (*Asio flammeus*) at Long Beach, November 16th, at Overpeck Creek, November 23rd, and at Hunts Point, November 4th.

Messrs. Hickey and Kuerzi had found Black-bellied Plover (*Squatarola squatarola*) at Hunts Point up to October 30th. They reported 2 Laughing Gulls (*Larus atricilla*) at Manhattan Beach, November 23rd.

Mr. Urner reported a Grasshopper Sparrow (*Ammodramus savannarum australis*) at Rahway, N. J., on November 5th and two new species for the Elizabeth, N. J., Region on November 9th—White-winged Scoter (*Oidemia deglandi*) and American Scoter (*Oidemia americana*) with Old-squaw (*Harelda hyemalis*).

The speaker of the evening was Clifford H. Pope, who entertained his audience with a humorous and highly informative account of his two and one-half years' collecting trip for reptiles in five provinces of China.

December 9, 1924.—Twenty-seven members and forty-eight guests.

Mrs. Edward Thomas, 841 West End Avenue, New York, was elected an active member.

The publication committee reported the completion of the abstract of the Society's proceedings for the four years ending, March, 1924, and the bill for printing was approved.

Mr. Hix at Long Beach, November 30th, reported an adult Kittiwake (*Rissa t. tridactyla*) and a bird he identified as a Purple Sand-

piper (*Arquatella m. maritima*), flying along shore. At Palisade Park, December 7th, he had seen a Baltimore Oriole (*Icterus galbula*).

Mr. L. N. Nichols reported the first Bronx record for American Scoter (*Oidemia americana*), 8 on December 1st at Pelham Bay; also 20 American Mergansers (*Mergus americanus*), December 1st—a new early Bronx record.

Mr. Hickey reported a Redhead (*Marila americana*) at Hunts Point, December 4th, and Mr. Nathan, 30 Bufflehead (*Charitonetta albeola*) off Staten Island, November 30th.

A flock of Bohemian Waxwings (*Bombycilla garrula*) was reported from Mt. Kisco on November 23rd, by Mrs. Tucker. They were seen at close range and white on wing noted.

Messrs. Matuszewski, Kassoy, Hickey, and others, at Hunts Point, on November 30th, had seen a Bufflehead (*Charitonetta albeola*), a new locality record, and a Canvasback (*Marila valisineria*), December 7th.

A Great Horned Owl (*Bubo v. virginianus*) had been found November 30th at Botanical Gardens by Messrs. Kessler, John Kuerzi, and Meyers; a Hooded Merganser (*Lophodytes cucullatus*), December 5th, at Hunts Point, by Mr. Kessler.

Mr. Allan Cruickshank has found a Barn Owl (*Aluco pratincola*), November 1st at Hunts Point, and 4 Woodcock (*Philohela minor*), November 8th, at Van Cortlandt Park.

Mr. Boulton reported a Catbird (*Dumetella carolinensis*) at Cold Spring Harbor, December 7th.

Dr. Frank Oastler then entertained the Society with a series of original slides of very unusual beauty and artistic excellence, portraying a trip up the Saskatchewan River to the snow fields, and also a visit to the peak of Mt. Rainier, to the Olympic Forests of Washington, and to the beautiful Crater Lake. Many of the slides showed close-ups of the blossoming plants of the Canadian Northwest, and of the wild life met. The most striking of the latter were pictures of Moose (*Alces americana*), Elk (*Cervus canadensis*), Mountain Sheep (*Ovis canadensis*) and Goats (*Oreamnos americanus*). One picture showed a Moose and a Deer (*Odocoileus sp.?*) on the same slide, standing together on a river bank. There were also excellent pictures of a treed Wild Cat (*Lynx fasciatus*), a Mountain Lion (*Felis oregonensis*), Grizzly Bear (*Ursus horribilis*) and cub and many of the smaller mammals and of the bird life of the region.

December 23, 1924.—Eighteen members and seven guests.

Mr. Hix reported a Green-winged Teal (*Nettion carolinense*), apparently a wild bird, on Bronx River, December 21st.

Mr. Kassoy had recently seen a Duck Hawk (*Falco peregrinus anatum*), in the Bronx, and other members commented on the occurrence of this species about the larger eastern cities, where the prevalence of pigeons proved the attraction.

The evening was devoted to a consideration of co-operative field work by members of the Society. President Nichols took up the question of the selection of local records presented at the meetings for the abstracts. It was the consensus of opinion that whenever records of unusual occurrence, either as to species or dates, were presented, some details of the observation should be given, and the basis of the identification stated. A motion was made, seconded and carried that a committee be appointed to consider all unusual records and to decide whether the identifications were clearly enough established to warrant their inclusion in the minutes.

The president appointed Messrs. Griscom and Urner as a committee of two with whom the president will act as an ex-officio member.

Mr. Griscom stressed the educational value of reporting all unusual records and discussing the identifications at the meetings.

President Nichols outlined the plan of assembling information as to bird distribution throughout the New York City Region that had been developed following a meeting of the Society in April, 1924. He spoke of the possibilities of further extending the work of preserving a clear picture of present day bird distribution in the New York City area.

The secretary reviewed the extent of the field information furnished to the Society since last spring. Special reports had been submitted by a limited number of members and a few non-members, showing the maximum numbers of each species seen in any given locality in a day as spring transients, summer residents, fall transients and winter residents. He spoke in favor of the suggestion that the Society undertake, in addition to present plans, a joint field trip in June, all available experienced field observers being secured to cover carefully some little known section of the New York City Region, with the object of obtaining as exact a record as possible of its bird life. He also mentioned as a promising line of effort, a suggestion made by W. DeWitt Miller that the Society endeavor to map out the present breeding range in the region of each species of warbler.

Mr. Griscom spoke of the value of further study of the outlying sections of the region and the value of consecutive trips over a selected area by the same observer. He believed that comparable and valuable records of breeding birds were more easily secured than those of migrants, a study of which requires daily investigation for satisfactory comparisons.

After several other members had given their views it was moved by Mr. Baker that the present Committee on Local Bird Records, composed of Messrs. Griscom, Carter, Davis, Howland, L. N. Nichols, Pangburn and Urner, send out to members a questionnaire to determine the willingness of each to co-operate in the various plans suggested and discussed at the meeting, including the submission of their field notes, the undertaking of occasional field trips in little frequented sections of the region as suggested by the Society, and participation in a joint June census of some selected area. The motion was carried.

January 13, 1925.—Twenty-six members and thirty-five guests.

The following new members were elected: Mr. F. L. Jaques, American Museum of Natural History, New York; Mr. Irving H. Kurzman, 215 West 101 Street, New York; Mrs. Wolfrid R. Boulton, 121 Parkside Avenue, Brooklyn.

Mr. Griscom proposed a resolution of congratulation to be presented to the Delaware Valley Ornithological Club on the occasion of their 35th annual dinner, which was adopted.

Among the field notes submitted were the following:

Jerome Reservoir—(Hickey)—Vesper Sparrows (*Poæcetes g. gramineus*), January 6th.

Pelham Bay—(Hix)—50 Black-crowned Night Herons (*Nycticorax n. nævius*).

New York City, at Broadway and 246th St.—(Chubb)—Nashville Warbler (*Vermivora r. rubricapilla*), November 23rd, December 2nd and 4th, a record the more unusual since a bird of this species had been seen in the same place December 16, 1918, and January 9, 1919.

Long Beach—(Baker, Eaton and Ingle)—2 Kittiwakes (*Rissa t. tridactyla*), 1 Glaucous Gull (*Larus hyperboreus*), 1 Brant (*Branta bernicla glaucogastra*), also a large duck with scoters which was probably King Eider (*Somateria sp.?*), all January 4th.

Montauk—(Griscom, Janvrin and Baker)—December 28th, 28 species including 5 Canada Geese (*Branta c. canadensis*), 1 Brant

(*Branta b. glaucogastra*), 1 Prairie Horned Lark (*Otocoris alpestris praticola*), 1 Vesper Sparrow (*Poæcetes g. gramineus*).

Englewood, N. J.—(Griscom)—1 Long-eared Owl (*Asio wilsonianus*), January 1st.

Dutchess County, N. Y.—(Griscom and Crosby)—20 Mourning Doves (*Zenaidura macroura carolinensis*), January 3rd; 3 Long-eared Owls (*Asio wilsonianus*), 1 Saw-whet Owl (*Cryptoglaux a. acadica*), 1 Bluebird (*Sialia s. sialis*), 25 Cedar Waxwings (*Bombycilla cedrorum*), January 4th.

Kensico Reservoir and Rye Lake, Westchester County—(Griscom, Coles and de Lacey Johnson)—January 11th, 100 American Mergansers (*Mergus americanus*), 3 Hooded Mergansers (*Lophodytes cucullatus*), 2 Mallards (*Anas platyrhynchos*), 70 Black Ducks (*Anas rubripes*), 1 male Ring-necked Duck (*Marila collaris*), 2 Golden-eyes (*Clangula c. americana*), 1 Bufflehead (*Charitonetta albeola*), 1 Killdeer (*Oxyechus vociferus*), 1 Bald Eagle (*Haliaeetus l. leucocephalus*).

Dutchess County, N. Y.—(Crosby)—1 Barn Owl (*Aluco pratincola*), January 9th, on Kruger's Island, and 5 Canvasbacks (*Marila valisineria*). By Crosby and Frost, January 11th, 1 Barn Owl (*Aluco pratincola*), 3 Long-eared Owls (*Asio wilsonianus*) and 1 Yellow-bellied Sapsucker (*Sphyrapicus v. varius*).

Mamaroneck N. Y.—(Coles)—1 Phoebe (*Sayornis phæbe*), January 4th.

Arlington, N. J.—(Marks)—Towhee (*Pipilo e. erythrophthalmus*), December 26th and 28th.

Pelham Bay—(L. N. Nichols)—6 Canvasbacks (*Marila valisineria*), January 5th.

Scarsdale, N. Y.—(L. N. Nichols)—2 Cardinals (*Cardinalis c. cardinalis*), January 6th, also frequently reported there by Miss Dorothy Miller. Seen in same locality last spring by Mr. Nichols; probably the northern limit of the present range about New York City.

Jerome Reservoir—(Cruickshank)—Great Black-backed Gull (*Larus marinus*), December 25th, and Horned Grebe (*Colymbus auritus*), January 4th and 5th.

Hudson River—(Cruickshank)—2 Pintails (*Dafila acuta*), December 30th.

Van Cortlandt Park—(Cruickshank)—1 Wilson's Snipe (*Galinago delicata*), January 1st.

Englewood Region—(Kessler, J. and R. Kuerzi)—50 Red-winged Blackbirds (*Agelaius p. phœniceus*), 6 Rusty Blackbirds (*Euphagus*

carolinus) and 9 Savannah Sparrows (*Passerculus sandwichensis savanna*), December 26th.

Long Beach—(Kessler, J. and R. Kuerzi)—3 Iceland Gulls (*Larus leucopterus*), 1 Kittiwake (*Rissa t. tridactyla*), 1 Cormorant, probably Double-crested (*Phalacrocorax a. auritus*), 1 Sanderling (*Calidris leucophæa*), 25 Brant (*Branta bernicla glaucogastra*) December 30.

Botanical Gardens—Same three observers—Great Horned Owl (*Bubo v. virginianus*), January 3rd, and Robin (*Planesticus m. migratorius*), January 7th.

Bronx County—(Kuerzi)—Report on the result of the Bronx County Bird Club Christmas Census on December 28th, when four parties of observers saw 49 species and 4,700 individuals. Interesting records were 2 Wilson's Snipe (*Gallinago delicata*) at Van Cortlandt Park (seen in same locality December 23rd, by Kuerzi, and 1 seen January 1st, by Ruff and Cruickshank). Redhead (*Marila americana*) on Hudson off Riverdale by Ruff and Cruickshank; Great Horned Owl (*Bubo v. virginianus*) at Bronx Park; flock of Grackles (*Quiscalus quiscula subsp.*) and 1 Flicker (*Colaptes auratus luteus*), Allerton Ave. by J. and R. Kuerzi; Red-headed Woodpecker (*Melanerpes erythrocephalus*) at Pelham Bay Park by Matuszewski and Kessler; Barn Owl (*Aluco pratincola*), 2 Short-eared Owls (*Asio flammeus*), 1 Canvasback (*Marila valisineria*) and 10 Killdeer (*Oxyechus vociferus*) at Hunts Point by Hickey, Herbert and Kassoy.

Van Cortlandt Park—(Kuerzi)—Long-eared Owl (*Asio wilsonianus*), December 23rd, and Winter Wren (*Nannus h. hiemalis*) and 12 Red-winged Blackbirds (*Agelaius p. phænicus*), January 1st.

Clason Point—(Kuerzi)—1 Bufflehead (*Charitonetta albeola*), 3 Canvasbacks (*Marila valisineria*), 150 Scaup (*Marila sp.?*) and 15 Golden-eye (*Clangula c. americana*) and from Botanical Gardens, 1 Fox Sparrow (*Passerella i. iliaca*), January 11th.

Mastic, Long Island—(J. T. Nichols)—With W. F., J. S. and D. G. Nichols, reported a Christmas Census on January 1st, too late for publication, which included 27 species, among which were 1 Canvasback (*Marila valisineria*), 20 Great Blue Herons (*Ardea h. herodias*), flock of 16; 10 Bob-white (*Colinus v. virginianus*), 1 Mourning Dove (*Zenaidura macroura carolinensis*), 2 Bald Eagles (*Haliaeetus l. leucocephalus*), 10 Fox Sparrows (*Passerella i. iliaca*), flock, 1 Winter Wren (*Nannus h. hiemalis*), 2 Hermit Thrushes (*Hylocichla guttata pallasi*), 3 Robins (*Planesticus m. migratorius*).

Mr. Nichols commented on the large number of late December

records of summer birds or transients, normally rare here in winter, which he sought to explain by the late fall which ended suddenly in cold weather.

Mr. J. T. Nichols then gave an illustrated description of shore bird tracks and their identification, of which the following is an abstract:

ABSTRACT OF PAPER ON SHORE BIRD TRACKS, BY J. T. NICHOLS.

"A study of the foot-prints of shore birds in the sand or mud of their haunts is an interesting detail usually overlooked by the field ornithologist, from which not infrequently useful corollary information may be gleaned. The first problem here, as elsewhere, is one of identification. By making rough sketches of tracks whereof the author is known, carefully measured for size, proportion of toes, and the angle of toe spread estimated, data can be collected from which unknown or partially known tracks can frequently be determined with ease and precision. It will be found that within certain limits various shore bird tracks are sufficiently diagnostic to be recognized at sight.

"The Spotted Sandpiper (*Actitis macularia*) shows a comparatively long hind toe, the broad, spreading track of the Yellow-leg is recognizable, and a plover track diagnostic. The Killdeer's (*Oxyechus vociferus*) track resembles that of the Black-bellied Plover (*Squatarola squatarola*) but its toes are much more slender. The track of the Least Sandpiper (*Pisobia minutilla*) in soft mud frequently shows the toes cleft to the base in a way that would be impossible for the Semipalmated Sandpiper (*Ereunetes pusillus*). Size, however, is the definite, tangible factor, most frequently useful in finer identification. Two instances come to mind where on a trip abroad, unfamiliar English birds were satisfactorily identified with aid of tracks, which otherwise must have remained doubtful; a Curlew which flushed at some little distance left a footprint too large for a Whimbrel (*Numenius phaeopus*) and a juvenile Ringed Plover (*Ægialitis hiaticula*), suspected of being a Little Ringed Plover (*Ægialitis dubia*), had a track which definitely placed it for the ordinary species which it was.

"In studying shore bird tracks it will soon be noticed and should always be born in mind as a thing for which allowance must be made, that the softness or hardness and texture of the ground affects considerably the character and appearance of the track. This complication makes it impossible to say definitely from scanty data at hand whether tracks of Semipalmated Sandpiper (*Ereunetes pusillus*) and Semipalmated Plover (*Ægialitis semipalmata*) can actually be recognized from those of other small species with which they might be confused through showing less of the basal portion of the toes.

"The immediate interest and usefulness of giving close attention to the tracks of shore birds is for the small aids it furnishes to their study in the field. Much of the data is actually about the birds' feet, determinable from specimens, but here presented in a more graphic and interesting manner, data which in itself is worth examining and trying to interpret. The long hind-toe of the Spotted Sandpiper (*Actitis macularia*) may well be correlated with its liking for rocky bits of shore, perching freely on stakes, etc. The thick toes of Sanderling (*Calidris leucophæa*)

and Black-bellied Plover (*Squatarola squatarola*) may be correlated with the beach-loving habits of both.

Dr. James P. Chapin then spoke on the breeding seasons of birds in Tropical Africa. He pointed out that birds as a whole have no set breeding season within 8 or 10 degrees of the equator; that rainfall is a more important factor in determining the nesting time of each species in that region than is temperature, which there has a maximum range of only about 30 degrees—from 65 to 94 degrees. Some species prefer dry weather for their nesting periods, some the opening, some the height, and some the close of the rainy season, depending on the character of food required.

He described the different conditions prevailing in the northern savannas and the equatorial forests and the opposing seasons of rainfall in the regions beyond the equatorial forest, above and below the equator. The doves he found to prefer the end of the rains and the dry season when nesting in the northern savannas where their food is chiefly grain, though in the equatorial forests many of the fruit-eating doves breed during the rains.

Storks and birds of prey usually prefer dry seasons, though some of the storks nest during the rainy periods, their habit in this respect changing with the latitude. Certain birds of prey, also nesting below the equator, prefer the wet season.

The bee-eaters nest north of the equator during the rainy season, while near the equator they begin to nest while the weather is dry and continue into the rains, though not to the periods of highest water.

The goat-suckers nest north of the equator at the beginning of the rains mostly, but those nesting in the equatorial forest prefer the rainy parts of the year. South of the forests they avoid the heaviest rains.

The woodpeckers as a whole prefer the dry periods though there are some exceptions.

Some of the thrushes nest at any time of the year; north of the equator mostly while weather is dry, but in the forests mostly during the rains.

The grass-warblers prefer the rainy season and the swallows mostly the beginning of the rains, when mud for nests is readily available. However two species of swallows may be found nesting at any time of the year.

The nesting periods of both sun-birds and weaver-birds are scattered, the former chiefly during the rains or toward the end of the dry

season while some weaver-birds in the equatorial forests nest throughout the year.

While there are exceptions, the passerines prefer the rainy season and the non-passerines the dry period when nesting north of the forests, but the rains when nesting in the equatorial forests.

January 27, 1925.—Seventeen members and twenty-four guests.

Mr. Rutgers R. Coles of Mamaroneck, N. Y., and Mr. de Lacey F. Johnson of Mount Vernon, N. Y., were elected resident members.

Mr. Griscom reported on the response to the questionnaire sent out to members by the Local Avifauna Committee.

Among the field notes were the following:

Englewood, N. J., (Griscom and Baker), January 18th, Black Duck (*Anas rubripes*), abundant; American Merganser (*Mergus americanus*), very scarce on the river; 1 Mallard (*Anas platyrhynchos*); 2 Fish Crows (*Corvus ossifragus*), the first Englewood record between October and mid-February; 2 Fox Sparrows (*Passerella i. iliaca*).

Long Beach, (Griscom and Watson), January 15th, Iceland Gull (*Larus leucopterus*), 16 Golden-eyes (*Clangula c. americana*), 1 Rough-legged Hawk (*Archibuteo lagopus sancti-johannis*), 4 Fish Crows (*Corvus ossifragus*).

Botanical Gardens, Bronx, (Hickey), January 21st, flock of Purple Finches (*Carpodacus p. purpureus*); while Matuszewski in same locality has seen a Red Fox (*Vulpes fulva*) under the hemlocks, and Kassoy a Fox Sparrow (*Passerella i. iliaca*), January 25th.

Van Cortlandt Park, (Hickey), January 22nd, Field Sparrow (*Spizella p. pusilla*).

Jerome Reservoir, (Hickey), January 22, Ring-billed Gull (*Larus delawarensis*).

Hunts Point, (Kessler), January 22, 10 Canvasbacks (*Marila valisineria*), and on January 25th Kassoy had seen 100.

The paper of the evening was by Ludlow Griscom of the American Museum of Natural History on "Ornithological Explorations Among the Wild Indians of Western Panama." Mr. Griscom recounted the experiences of his party in reaching the high mountains on the continental divide in a section of western Panama previously unvisited by a naturalist, inhabited by Indians who are hostile to strangers. It was his good fortune to receive permission to enter their country, and he was able to remain ten days before being forced to leave, when a

considerable number of new species and subspecies were discovered and the ranges of many other species were materially extended.

The expedition also visited the heavy coastal forests where the extraordinary variety of birds and the gigantic size of the mahogany trees were among the outstanding features of the country. The party also went to sea for water-birds, and spent an interesting day collecting the bad-tempered and poisonous sea-snakes which are found on calm days floating on the surface of the ocean five or ten miles from shore.

The paper was illustrated with colored lantern slides, and specimens of the more remarkable or beautiful birds were exhibited. At the close of his remarks, Mr. Griscom called upon Mr. Rudyerd Boulton, his chief assistant and photographer of the expedition, to show two reels of motion pictures which he had taken as opportunity offered with a Sept camera for the University of Pittsburgh.

February 10, 1925.—Twenty-six members and thirty-four guests.

A number of observers reported on the occurrence of ducks in the Bronx Region, chiefly at Hunts Point. On February 1st, Mr. Kassoy had seen 5 species, including 19 Bufflehead (*Charitonetta albeola*), and 250 Canvasbacks (*Marila valisineria*). On January 31st, Mr. Eaton reported 6 species, including 200 Canvasbacks (*Marila valisineria*), 1 Redhead (*Marila americana*), 6 Bufflehead (*Charitonetta albeola*), and 2 White-winged Scoters (*Oidemia deglandi*). Messrs. J. and R. Kuerzi and Mr. Kessler on January 31st, had seen 7 species, including 1 American Merganser (*Mergus americanus*) and a drake Ring-necked Duck (*Marila collaris*), identified by its black back in comparison with Scaup, and the shape of its head. The same observers on February 1st, same locality, saw 20 Bufflehead (*Charitonetta albeola*). Mr. Hix on February 8th, had seen 2 Canvasbacks (*Marila valisineria*) and 1,000 Scaup (*Marila marila*) at the mouth of the Bronx River.

Mr. Hickey submitted to the Secretary an analysis of duck records at Hunts Point from December 1st to February 10th. Numbers of Black Ducks (*Anas rubripes*) he reported as fairly constant—14 records averaging 32 with 150 maximum December 28th. Golden-eye (*Clangula c. americana*), 11 December records averaging about 140; after January 1st, 9 records averaging 46; maximum December 7th—600. Scaup (*Marila marila*) averaged 61 for 15 observations; maximum 200 January 11th. Canvasbacks (*Marila valisineria*) were reported 6 times in December, averaging 3; since January 1st, 10 times

and increasing; since January 31st average 550, with 800 maximum on February 3rd.

Mr. Kuerzi reported the Great Horned Owl (*Bubo v. virginianus*) still in the Bronx Park roost, February 8th; also 7 Bluebirds (*Sialia s. sialis*), January 29th and 6 on February 8th; also 2 Robins (*Planesticus m. migratorius*), February 8th.

From Flushing, February 6th, Mr. Eaton reported at least 3 Fish Crows (*Corvus ossifragus*) and 1 Winter Wren (*Nannus h. hiemalis*). He also reported a swan, probably a Mute (*Cygnus olor*), seen flying down the Hudson River February 7th, off Liberty Street.

Mr. Eaton also referred to a trip to Barnegat, N. J., January 24th-25th, with Messrs. Baker, Carter, Jaques and Urner. Large flocks of Starlings (*Sturnus vulgaris*) were found wintering along the outer beach about Mantaloking. At the south end of the bay about 3,000 Brant (*Branta bernicla glaucogastra*) were seen; a number of Sanderlings (*Calidris leucophæa*), and near the light at Barnegat City 1 Mocking bird (*Mimus p. polyglottos*).

In Central Park, Mr. Hix had seen 1 Flicker (*Colaptes auratus luteus*), February 8th.

Among the Elizabeth, N. J., records reported by Mr. Urner were Iceland Gull (*Larus leucopterus*), January 31st; unusual numbers of Ring-billed Gulls (*Larus delawarensis*), in late January; 3 Mallards (*Anas platyrhynchos*), February 7th; 15 Canvasbacks (*Marila valisineria*), January 18th; 2 Old-squaws (*Harlelda hyemalis*), January 18th; 1 Great Blue Heron (*Ardea h. herodias*), January 4th; 1 Killdeer (*Oxyechus vociferus*), evidently migrating, February 8th; 7 Long-eared Owls (*Asio wilsonianus*), February 1; 6 Savannah Sparrows (*Passerculus sandwichensis savanna*), January 4th; 1 Seaside Sparrow (*Passerherbulus m. maritimus*), January 4th; 28 Cedar Waxwings (*Bombycilla cedrorum*), February 8th.

From the Palisades, Mrs. Rich reported 4 Bluebirds (*Sialia s. sialis*), February 7th.

Mr. J. T. Nichols and Mr. Griscom had visited the Essex County, Mass., coast, February 7th and 8th, where, guided by S. G. Emilio and other members of the Essex County Ornithological Club, they had observed the following of especial interest: 2 Dovekies (*Alle alle*) and 1 Brunnich's Murre (*Uria l. lomvia*) at close range; several Guillemots (*Cepphus grylle*); a half dozen Cormorants, probably *P. carbo*, at long range, certainly difficult to distinguish from the Double-crested (*P. a. auritus*); 2 black adults with a large area of yellow, not orange,

at base of the bill; also a very beautiful Barrow's Golden-eye (*Clangula islandica*) drake; a flock of upwards of 75 Purple Sandpipers (*Arquatella m. maritima*) on one of the outer rocks, and some 50 on the base of a larger islet.

The speaker of the evening was Mr. Wm. H. Carr, who told an interesting story of the habits of the Beaver (*Castor canadensis*) and the Skunk (*Memphitis nigra*), illustrating his remarks with many slides, and a live Skunk, called "Sachet," which he produced on the platform, without unpleasant results, from the depths of a leather bag. Mr. Carr described the building and repairing of dams by the beaver, and their feeding habits. He had found in his studies no indication that the beaver, in cutting a tree, was able to fell it in the direction best suited to its needs. He showed the effects of beaver dams on topography, and how old and large dams created meadows which added to productivity of the region.

February 24, 1925.—Twenty-six members and fourteen guests.

Mrs. Gladys Gordon Fry was elected a resident member.

A number of members reported on the early migration during the mild weather after mid-February.

At Newton, N. J., February 21st-23rd, Mr. Hix had found Bluebirds (*Sialia s. sialis*) present in numbers and 1 Robin (*Planesticus m. migratorius*), February 22nd.

At Central Park, Mr. Capen reported 1 Robin (*Planesticus m. migratorius*), February 16th, and Grackle (*Quiscalus quiscula subsp.*), February 23rd.

At Bronx Park, February 22nd, Mr. L. N. Nichols saw 3 Grackles (*Quiscalus quiscula subsp.*). Messrs. Kuerzi, Kessler and Kassoy reported the Great Horned Owl (*Bubo v. virginianus*) still in the Park, February 22nd. Several pellets of this owl were examined by Mr. Carter and found to contain remains of 9 Brown Rats (*Rattus norvegicus*), Rabbits (*Sylvilagus floridanus*), wing-bone of a Gallinaceous bird, probably a Pheasant, and a tuft of feathers from a Saw-whet Owl (*Cryptoglaux a. acadica*).

From Overpeck Creek, February 22nd, Mr. Baker reported 2 Mallards (*Anas platyrhynchos*), 75 Pintails (*Dafila acuta*), 15 Buffleheads (*Charitonetta albeola*), 8 Red-winged Blackbirds (*Agelaius p. phæniceus*), 2 Grackles (*Quiscalus quiscula subsp.*) and 1 Bluebird (*Sialia s. sialis*).

From Van Cortlandt Park, Messrs. Kuerzi and Kessler reported

2 Red-winged Blackbirds (*Agelaius p. phœniceus*), February 21st, and 1 Kingfisher (*Ceryle alcyon*), 1 Woodcock (*Philohela minor*) and other early migrants February 24th.

From Pelham Bay Park, February 21st, Messrs. Kuerzi and Kessler reported 1 Black-backed Gull (*Larus marinus*), 1 Ring-billed Gull (*Larus delawarensis*), 800 Scaups (*Marila marila*) and 1 Red-headed Woodpecker (*Melanerpes erythrocephalus*).

From Hunts Point an Iceland Gull (*Larus leucopterus*) was reported February 20th by Kuerzi and Kessler (their second record for the locality); also 150 Canvasbacks (*Marila valisineria*), February 12th by Kassoy, and February 14th by Kuerzi and Kessler: 2 Short-eared Owls (*Asio flammeus*), February 23rd by Kassoy, and 1 Pipit (*Anthus rubescens*), February 22nd by Kassoy. Mr. Cruickshank reported 3 Killdeer (*Oxyechus vociferus*), probably wintering, from Hunts Point, February 14th.

From Moravian Cemetery, Staten Island, February 23rd, Kuerzi and Kessler reported 6 Long-eared Owls (*Asio wilsonianus*), 15 Cedar Waxwings (*Bombycilla cedrorum*) and 2 Cardinals (*Cardinalis c. cardinalis*).

From Hunters Island, Mr. Ruff reported 1 Fish Crow (*Corvus ossifragus*), February 22nd.

From Montauk, February 12th, a Vesper Sparrow (*Poæcetes g. gramineus*) was reported by Mr. Williams, and another February 13th at Riverdale by Mr. Cruickshank.

From Tottenville, Mrs. Smith reported a Cardinal (*Cardinalis c. cardinalis*).

At Amenia, N. Y., Mr. Spingarn had seen a Winter Wren (*Nannus h. hiemalis*), February 2nd, a Kingfisher (*Ceryle alcyon*), February 13th, and a Bluebird (*Sialia s. sialis*), February 21st.

An early northern movement was also reported by Mr. Eaton from Weston, Mass., where on February 22nd he had seen 3 Bluebirds (*Sialia s. sialis*), a new early record for the locality, comparing with a 14 year average of March 14th.

At Great Piece Meadows, N. J., February 22nd, Messrs. Howland and Cleaves had seen Bluebirds (*Sialia s. sialis*), and at Clinton a Red-headed Woodpecker (*Melanerpes erythrocephalus*).

At Elizabeth, N. J., Mr. Urner reported 350 Ring-billed Gulls (*Larus delawarensis*), February 14th; 6 Pintails (*Dafla acuta*), February 12th; 1 Widgeon (*Mareca americana*), February 14th; 1 Pipit

(*Anthus rubescens*), February 12th; 30 American Mergansers (*Mergus americanus*), February 23rd.

At Barnegat Bay, N. J., February 22nd, Messrs. Griscom, Weber and Urner had seen 1 Iceland Gull (*Larus leucopterus*) and flocks estimated to contain 80,000 Brant (*Branta bernicla glaucogastra*) and 20,000 Canada Geese (*Branta c. canadensis*) also 2 Turkey Vultures (*Cathartes aura septentrionalis*), February 21st,—an early date.

Mr. Bowdish had heard a Woodcock (*Philohela minor*), at Demarest, February 23rd. He reported the passage of the Bobolink protective bill by the New Jersey Senate, an announcement which was greeted with applause.

The remainder of the evening was devoted to a discussion of the actions of birds during the recent eclipse of the sun, which was total over part of the New York Region.

March 10, 1925.—The annual dinner of the Society was held in the Mitla Restaurant, American Museum of Natural History, the evening of March 10, 73 members and guests being present; while at the annual meeting, which followed, 43 members and 41 guests were present.

Mr. Irving Kassoy was elected a resident member of the Society.

The Secretary then read his annual report as follows:

"During the past year the Linnæan Society of New York has held sixteen meetings with a total attendance of 855, the largest in the history of the Society.

"The twelfth annual dinner, held in the Mitla Restaurant, March 11, 1924, was attended by forty-eight members and guests and thirty-two members were present at the annual meeting on the same evening.

"At the remaining fifteen meetings the total attendance averaged 52.9; that of members 21.3.

"The largest number present at any one meeting was 102, on November 15, when a postponed lecture in another hall in the Museum brought an unusual number of visitors, many more being turned away because of lack of seating capacity. On several other occasions during the year the seating capacity of the room used by the Society has been inadequate to accommodate all visitors, and if the growth of the Society and interest in its meetings continues at its recent rate the problem of accommodation will become more acute. The smallest attendance was on December 23, only 25 being present.

"The Society has lost by death, one resident member, George Gladden. One member has resigned and twenty-three new members have been elected, so that the membership now stands: Resident, 125; corresponding, 23; honorary, 3; total, 151.

"The subjects considered at eleven of the sixteen meetings of the year were primarily ornithological; of the remainder, two were on travel, one on mammalogy,

one on reptile collecting and one on fossil collecting. One meeting was devoted to bird-banding, and the usual two evenings were devoted entirely to field observations. Two meetings were also given over to a consideration of systematic collection and preservation of local records indicating bird distribution and numbers in the New York City region. This matter is now in the hands of the Local Avifauna Committee which has received many promises of co-operation from the active field workers of the Society. Preliminary plans are also being made to undertake breeding season census work in some of the least known parts of the region. The co-operation of thirty members has been promised in this undertaking.

"Abstracts of the Proceedings, Nos. 33, 34, 35, and 36, for the years 1921, 1922, 1923, and 1924, together with Mr. T. Gilbert Pearson's paper "The Winter Birds of Southern Texas," have been published.

CHAS. A. URNER, *Secretary.*"

For the Auditing Committee, Mr. Griscom reported that the annual report of the Treasurer had been examined and found correct. The report was accepted. It showed receipts for the year of \$437.44; disbursements, \$640.41; and balance March 5 of \$3,159.71.

The following officers were elected:

President—MR. J. T. NICHOLS

Vice-President—DR. E. R. P. JANVRIN

Secretary—MR. CHAS. A. URNER

Treasurer—MR. JOHN H. BAKER

The speaker of the evening was Mr. C. M. Breder, Jr., of the New York Aquarium, who with slides and moving pictures described his trip with the Marsh Expedition through the jungles of Eastern Panama. The party journeyed from El Real de Santa Maria, up the Rio Chucunaque and Rio Sucubti, first by launch, then by dug-out, and finally by trail to the Atlantic Coast, a trail which required in 22 miles the fording of 125 streams.

Mr. Breder described interestingly the hardships encountered and the native life of the area, the negroes of the lower reaches of the Pacific slope, the primitive Chocoi Indians of the upper reaches, with their strange fiestas and strange drinks, and the Cunas, or San Blas Indians, of the Atlantic side.

The party found the Cuna Indians by no means hostile. It was among them that the light-skinned Indians were discovered, the location of which was the primary scientific object of the expedition. Moving pictures and slides of these light Indians, born of dark-skinned parents, were shown.

Mr. Breder's special work concerned itself with ichthyology and herpetology, his efforts concentrating on life history studies. He com-

pared the great tides of the Pacific shore to the very limited tidal movement on the Atlantic, and the influence exerted on marine and other forms of life. An extensive intrusion of marine fishes was encountered, associated with the great tides. The life histories of frogs received particular attention, and the outstanding achievement in this direction was the accumulation of the practically complete life history of *Hyla rosenbergi*, a species about the habits of which nothing was previously known.

The expedition endured many hardships from drought, flood and disease, losing two of its members by death.

March 24, 1925.—Thirty-two members and twenty-nine guests.

Mr. Griscom stated that a tentative draft of a revised constitution and by-laws had been prepared by the committee of three appointed for that purpose. It was moved and seconded that a draft of the revised constitution be sent to members, and that the first April meeting be set aside for its consideration.

Among the field notes submitted were the following:

Dutchess County, N. Y., by Mr. Crosby: New early records: Mallard (*Anas platyrhynchos*), Widgeon (*Mareca americana*) and Pintail (*Dafila acuta*), March 12th; Green-winged Teal (*Nettion carolinense*), March 13th; Wood Duck (*Aix sponsa*), March 14th; Blue-winged Teal (*Querquedula discors*) (pair), March 15th; Hooded Merganser (*Lophodytes cucullatus*), March 22nd; Lesser Scaup (*Marila affinis*), March 16th; Kingfisher (*Ceryle alcyon*), March 21st. With Messrs. Eaton, Griscom and Frost 51 species March 22nd, including Pied-billed Grebe (*Podilymbus podiceps*) and Gadwall (*Chaulelasmus streperus*).

Westchester County, N. Y., by Messrs. Coles and Johnson: March 22nd, 42 species, including Pied-billed Grebe (*Podilymbus podiceps*), 6 Ring-necked Ducks (*Marila collaris*), 2 Wood Ducks (*Aix sponsa*), 3 Woodcock (*Philohela minor*) and 1 Field Sparrow (*Spizella p. pusilla*). By Messrs. E. G., L. N., and Mrs. L. N. Nichols and Mr. Carlyle Morris at Lincoln, March 8th, 6 Cowbirds (*Molothrus a. ater*) (early record), 1 Towhee (*Pipilo e. erythrophthalmus*), 1 Bob-white (*Colinus v. virginianus*); along Tibbetts Brook, March 22nd, 3 Northern Flickers (*Colaptes auratus luteus*) and at least 2 Bronzed Grackles (*Quiscalus quiscula æneus*). By Mr. John F. Kuerzi, March 22nd, 30 Horned Larks (*Otocoris a. alpestris*) near Hillview Reservoir, and 3 Bob-whites (*Colinus v. virginianus*) at Tibbetts Brook Park.

At Ossining, N. Y., Mr. Jaques reported a Great Black-backed Gull (*Larus marinus*).

At Jerome Reservoir, Mr. Ruff reported on March 5th, 2 Horned Grebe (*Colymbus auritus*); Messrs. Hickey and Cruickshank, a Great Black-backed Gull (*Larus marinus*), March 5th.

Van Cortlandt Park, by Mr. Kuerzi: 2 Widgeon (*Mareca americana*), February 28th; 1 Phoebe (*Sayornis phæbe*), March 15th; 3 Cowbirds (*Molothrus a. ater*), March 11th; several Northern Flickers (*Colaptes auratus luteus*), March 15th; 2 Towhees (*Pipilo e. erythro-phthalmus*), March 11th. By Messrs. Ruff and Cruickshank, 1 Kingfisher (*Ceryle alcyon*), February 25th. By Mr. Cruickshank, Pintail (*Dafla acuta*), March 8th to 13th. By Messrs. Nathan and Cruickshank, Tree Swallow (*Iridoprocne bicolor*), March 21st. By Mr. Hickey, Bluebird (*Sialia s. sialis*), February 25th; Chipping Sparrow (*Spizella p. passerina*), March 21st. By Mr. Kassoy, 3 Wood Ducks (*Aix sponsa*), March 15th.

Bronx Park, by Mr. Hickey, 5 Pintails (*Dafla acuta*), March 4th.

Hunts Point, by Messrs. Kassoy and Kessler, 20 Canvasbacks (*Marila valisineria*), March 7th.

Hudson River (Day Line Pier), by Mr. Hix, Iceland Gull (*Larus leucopterus*), March 22nd.

Long Beach, by Messrs. Kuerzi and Kessler, Glaucous (*Larus hyperboreus*) and Iceland Gulls (*Larus leucopterus*) and 3 Piping Plover (*Ægialitis meloda*), March 21st.

Fire Island Beach, by Mrs. Smith, 2 Fish Hawks (*Pandion haliaetus carolinensis*), March 22nd, a very early date.

Ridgewood, N. J., by Mr. Walsh, 3 Tree Swallows (*Iridoprocne bicolor*), March 21st.

Englewood, N. J., by Mr. Griscom and Dr. Eliot, March 1st, 75 Cowbirds (*Molothrus a. ater*) (early date), with one albino, pure white with cream colored wings and tail. By Mr. Griscom and Dr. Janvrin, March 8th, 3 species of ducks, including Pintail (*Dafla acuta*), also 2 Rusty Blackbirds (*Euphagus carolinus*). By Mr. Griscom, Dr. Eliot and Mr. J. M. Johnson, March 15th, 35 species, including 8 species of ducks: 6 Mergansers (*Mergus americanus*), 4 Mallards (*Anas platyrhynchos*), 250 Black Ducks (*Anas rubripes*), 6 Widgeon (*Mareca americana*), 12 Green-winged Teal (*Nettion carolinense*) (earliest), 200 Pintails (*Dafla acuta*), 1 Lesser Scaup (*Marila affinis*), 6 Canada Geese (*Branta c. canadensis*); also 1 Killdeer (*Oxyechus vociferus*), Phoebe (*Sayornis phæbe*), 3 Pipits (*Anthus rubescens*)

(earliest). By Messrs. Kassoy, Ruff, Cruickshank and Matuszewski, March 22nd, 14 Green-winged Teal (*Nettion carolinense*), 500 Pintails (*Dafila acuta*), 5 Mallards (*Anas platyrhynchos*), 7 Canada Geese (*Branta c. canadensis*), 1 Wilson's Snipe (*Gallinago delicata*). By Mr. Hix on March 15th, Turkey Vulture (*Cathartes aura septentrionalis*). By Mr. Kassoy and others on March 8th, Mourning Dove (*Zenaidura macroura carolinensis*). By Mr. Kuerzi on March 17th, 10 species of ducks, including Hooded Merganser (*Lophodytes cucullatus*), 200 Pintails (*Dafila acuta*), 1 Canvasback (*Marila valisineria*), 1 Widgeon (*Mareca americana*), 2 Green-winged Teal (*Nettion carolinense*) and 1 Ruddy Duck (*Erismatura jamaicensis*). By Messrs. L. N. and E. G. Nichols on March 18th, 3 Chipping Sparrows (*Spizella p. passerina*) (earliest) and 1 Cooper's Hawk (*Accipiter cooperi*).

South River and Runyon, N. J., by Mr. W. DeWitt Miller on March 15th, 8 species of ducks, including Wood Duck (*Aix sponsa*) (earliest), Redhead (*Marila americana*) (first locality record), 2 pairs of Ring-necked Ducks (*Marila collaris*) (earliest).

The paper of the evening was by Mr. Alex B. Klots who gave an illustrated talk on the wild life of the Jackson Hole country, Wyoming. He showed photographs of a number of the native birds of the region,—the Long-tailed Chickadees (*Penthestes atricapillis septentrionalis*), Desert Horned Lark (*Otocornis alpestris leucolæma*), Gray Ruffed Grouse (*Bonasa umbellus umbelloides*), Dusky Grouse (*Dendragapus obscurus obscurus*) and others. He also described the mortality among the wintering elk in the Jackson Hole Region and showed some interesting close-up pictures of bears.

Mr. Bowdish of the New Jersey Audubon Society reported the passage of the Bobolink Protective Bill by the New Jersey Legislature.

April 14, 1925.—Twenty-seven members and fifteen guests.

Among the field notes submitted were the following:

Dutchess County, N. Y., by Mr. Crosby: Ruby-crowned Kinglet (*Regulus c. calendula*) and Yellow-bellied Sapsucker (*Sphyrapicus v. varius*), April 8th.

Van Cortlandt Park and vicinity, by Mr. Baker, Brown Thrasher (*Toxostoma rufum*), April 12th. By Messrs. Hix and Nathan, Rough-winged Swallow (*Stelgidopteryx serripennis*), April 11th (earliest date); seen also April 14th by Messrs. J. and R. Kuerzi, Cruickshank and Le Maire. Messrs. L. N. and E. G. Nichols, Ruby-crowned Kinglet (*Regulus c. calendula*) and 2 Hermit Thrushes (*Hylocichla guttata*

pallasi), April 8th. By Messrs. J. and R. Kuerzi, Wilson's Snipe (*Gallinago delicata*), March 29th; Pied-billed Grebe (*Podilymbus podiceps*), April 1st; Virginia Rail (*Rallus virginianus*), April 5th. By Mr. Cruickshank, 2 Green-winged Teal (*Nettion carolinense*), March 28th; Myrtle (*Dendroica coronata*) and Pine Warblers (*Dendroica vigorsi*), Brown Thrasher (*Toxostoma rufum*) and Osprey (*Pandion haliaetus carolinensis*), April 10th; Winter Wren (*Nannus h. hiemalis*) and Vesper Sparrow (*Poæcetes g. gramineus*), April 11th; Barn Swallow (*Hirundo erythrogastra*), April 12th. Messrs. Kuerzi and Kessler, 2 Woodcock (*Philohela minor*), April 12th.

Bronx Park, by Mr. Kassoy, Virginia Rail (*Rallus virginianus*), March 29th. By Messrs J. and R. Kuerzi, Chipping Sparrow (*Spizella p. passerina*), April 8th; Pine Warbler (*Dendroica vigorsi*), April 8th; Yellow-bellied Sapsucker (*Sphyrapicus v. varius*) and Barn Swallow (*Hirundo erythrogastra*), April 11th; 3 Myrtle Warblers (*Dendroica coronata*), April 10th.

Scarsdale, N. Y., by Messrs. J. and R. Kuerzi, Towhee (*Pipilo e. erythrophthalmus*), April 13th.

Pelham Bay, by Messrs. J. and R. Kuerzi, 14 Canvasbacks (*Marila valisineria*) and 1 Osprey (*Pandion haliaetus carolinensis*) April 11th.

Hunts Point, by Mr. Kassoy, 4 Greater Yellow-legs (*Totanus melanoleucus*), April 11th; 1 Lesser Scaup (*Marila affinis*) and 1 Short-eared Owl (*Asio flammeus*), April 12th.

Bay Ridge, by Mr. Hix, Yellow-bellied Sapsucker (*Sphyrapicus v. varius*), April 12th.

Flushing, Long Island, by Mr. Eaton, a wintering Long-billed Marsh Wren (*Telmatodytes p. palustris*), seen March 7th. By Mr. Griscom, 2 Virginia Rail (*Rallus virginianus*), April 4th, earliest date for Long Island.

Central Park, Mr. Griscom reported the migration late, with first real flight on April 13th.

Englewood, N. J., on March 28th, 2 Pine Warblers (*Dendroica vigorsi*), by Messrs. J. and R. Kuerzi and Kessler. On March 29th, 11 species of ducks, including 1 Shoveller (*Spatula clypeata*) and 7 Canvasbacks (*Marila valisineria*) seen by Messrs. Baker, Ingle, Griscom, J. M. Johnson, Cruickshank, Matuszewski and Ruff, the latter with Mr. Nathan also reporting Pied-billed Grebe (*Podilymbus podiceps*) and Wilson's Snipe (*Gallinago delicata*). On April 4th, Messrs. J. and R. Kuerzi, Kessler and Cruickshank reported 11 species of water fowl, including Canvasback (*Marila valisineria*), Shoveller (*Spatula*

clypeata) and 8 Canada Geese (*Branta c. canadensis*). Same date Mr. Hix reported Green-winged Teal (*Nettion carolinense*) (pair) and Ring-necked Duck (*Marila collaris*) (pair). On April 5th, Ruby-crowned Kinglet (*Regulus c. calendula*) by Dr. Janvrin, and by Mr. Griscom, Dr. Eliot and Mr. Baker 55 species including 13 species of ducks—Wood Duck (*Aix sponsa*) (pair, up Hackensack River), 1 Shoveller (*Spatula clypeata*), 2 female Ring-necked Ducks (*Marila collaris*) (also seen by Messrs. Matuszewski and Herbert), 2 pairs of Canvasbacks (*Marila valisineria*) and Yellow-Palm Warbler (*Dendroica palmarum hypochrysea*). On April 9th by Messrs. J. and R. Kuerzi and Kessler, 10 species of ducks, including 8 Green-winged Teal (*Nettion carolinense*), 2 Blue-winged Teal (*Querquedula discors*), 1 Golden-eye (*Clangula c. americana*), both Scaups (*Marila marila* and *Marila affinis*), the two being seen in direct contrast, a probable addition of a new species to the Englewood Region; also 2 Woodcock (*Philohela minor*). On April 10th, by Mr. Hickey, Greater Yellow-legs (*Totanus melanoleucus*) (earliest locality record), and Short-eared Owl (*Asio flammeus*). By Messrs. Griscom and Baker, April 10th only 5 species of ducks, including 1 Canvasback (*Marila valisineria*); 15 Wilson's Snipe (*Gallinago delicata*) on same date. On April 12th, Horned Grebe (*Colymbus auritus*) and American Bittern (*Botaurus lentiginosus*) by Messrs. Matuszewski and Nathan.

Boonton, N. J., by Mr. Carter: March 22nd, Mallard (*Anas platyrhynchos*), 10; 15 Green-winged Teal (*Nettion carolinense*); 2 Blue-winged Teal (*Querquedula discors*). On March 29th, 2 or more Ring-necked Ducks (*Marila collaris*). On April 5th, 16 Mallards (*Anas platyrhynchos*) and 4 Ring-necked Ducks (*Marila collaris*). On April 12th, 1 Chipping Sparrow (*Spizella p. passerina*).

Princeton, N. J., March 28th, Messrs. Hix and Rogers reported 10 Pied-billed Grebe (*Podilymbus podiceps*), a pair of Green-winged Teal (*Nettion carolinense*), Shoveller (*Spatula clypeata*), 5 Wood Ducks (*Aix sponsa*), 2 Coots (*Fulica americana*), Chipping Sparrow (*Spizella p. passerina*), Barn Swallow (*Hirundo erythrogastra*), and Tree Swallow (*Iridoprocne bicolor*).

Elizabeth, N. J., by Mr. Urner, March 8th, Chipping Sparrow (*Spizella p. passerina*); March 22nd, Osprey (*Pandion haliaetus carolinensis*), and 2 Hooded Mergansers (*Lophodytes cucullatus*); March 28th, 2 Blue-winged Teal (*Querquedula discors*).

Barneget, N. J., March 14th and 15th, by Messrs. Baker, Carter, Eaton and Urner, European Widgeon (*Mareca penelope*) with 150

American Widgeon (*Mareca americana*), 1 Piping Plover (*Ægialitis meloda*).

Portland, Conn., by Mr. J. H. Sage, reported by Dr. Dwight, Purple Martin (*Progne s. subis*), April 10th; Killdeer (*Oxyechus vociferus*), nest and 4 eggs April 8th on golf course.

Mr. A. H. Helme reported a Snowy Owl (*Nyctea nyctea*) killed about February 15th, 1925, at Springfield, Long Island.

The remainder of the evening was devoted to the amendment and final adoption of a revised constitution which had been prepared by a committee of three, Messrs. Griscom (chairman), Howland and Urner. Revised by-laws were also adopted.

At the conclusion of the meeting, on motion of Mr. L. N. Nichols a resolution was adopted thanking the committee for its work and directing that the new constitution and by-laws be printed in the next abstract of the Society's proceedings.

April 28, 1925.—Thirty-two members and nineteen guests.

Mr. A. B. Klots, of 125 West 78th St., New York, and Mr. Wm. H. Carr, of 6 Neff Place, Flushing, Long Island, were elected to membership.

Dr. Jonathan Dwight was elected a Fellow of the Society in recognition of his distinguished services to the organization.

Balloting was then started for the election of the Council. Dr. Chapin, Messrs. Griscom and Carter were elected on the first ballot; Messrs. Howland, L. N. Nichols, Bowdish and Dr. Dwight on the second and Messrs. Crosby and Eaton on subsequent ballots. It was voted to rank the Council members by number of votes, in case of ties using alphabetical order, selecting first, fourth and seventh to serve three years; second, fifth and eighth two years, and third, sixth and ninth one year. Thus the grouping stood:

To serve three years: Dr. Chapin, Mr. Howland and Dr. Dwight.

To serve two year: Messrs. Griscom, L. N. Nichols, Crosby.

To serve one year: Messrs. Carter, Bowdish and Eaton.

Many field notes were submitted during the balloting, and presented to the Secretary after the meeting, which showed an unusually early and remarkable wave of transients following two nights of warm April weather, and many records were broken. Among the records were the following:

Dutchess County, N. Y., by Mr. Crosby: 2 Nashville Warblers (*Vermivora r. rubricapilla*), April 26th.

Chappaqua, N. Y., by Mr. Pangburn: 63 Cedar Waxwings (*Bombycilla cedrorum*), February 15th; Robin (*Planesticus m. migratorius*), March 11th; Louisiana Water Thrush (*Seiurus motacilla*), April 21st; Broad-winged Hawk (*Buteo platypterus*) and Black and White Warbler (*Mniotilta varia*), April 22nd; House Wren (*Troglodytes a. aedon*), April 25th; Redstart (*Setophaga ruticilla*), April 26th.

Lake Waccabuc, N. Y., by Mr. C. M. Sidebottom: 1 Greater Yellow-leg (*Totanus melanoleucus*), April 6th; by Mr. C. Ogburn, Jr., 10 Tree Swallows (*Iridoprocne bicolor*), April 3rd and 1 Osprey (*Pandion haliaetus carolinensis*), April 5th.

Bronx Region: Pied-billed Grebe (*Podilymbus podiceps*), Van Cortlandt Park, April 26th, by Messrs. Kassoy and Herbert. American Merganser (*Mergus americanus*), Bronx Park, April 19th, by Mr. Ruff (late record). Green Heron (*Butorides v. virescens*), Pelham Bay, April 19th, by Messrs. Ruff and Matuszewski. Florida Gallinule (*Gallinula galeata*), Bronx Swamp, April 17th, by Mr. Cruickshank. King Rail (*Rallus elegans*), Bronx Swamp, April 19th, heard by Messrs. Kuerzi and Kessler; seen by Mr. Kuerzi April 20th; seen by Mr. Cruickshank April 23rd and 25th. Virginia Rail (*Rallus virginianus*), Bronx Swamp, 3 on April 17th, by Mr. Cruickshank (early record). Sora (*Porzana carolina*), Bronx Swamp, April 17th, by Mr. Cruickshank. Spotted Sandpiper (*Actitis macularia*), Hunts Point, April 18th, by Mr. Hickey (early record). Short-eared Owl (*Asio flammeus*), Hunts Point, April 28th, by Mr. Hickey (late record). Red-headed Woodpecker (*Melanerpes erythrocephalus*), 6 at Hunters Island, April 18th, by Messrs. Kuerzi and Kessler. Warbling Vireo (*Vireosylva g. gilva*), Bronx Park, April 28th, by Mr. Ruff. Solitary Vireo (*Lanivireo s. solitarius*), Bronx Park, April 23rd, by Messrs. J. and R. Kuerzi. Black and White Warbler (*Mniotilta varia*) abundant April 25th and 26th. Blue-winged Warbler (*Vermivora pinus*), Bronx Park, April 28th, by Messrs. J. and R. Kuerzi. Nashville Warbler (*Vermivora r. rubricapilla*), Bronx Park, April 25th, by Mr. Ruff (early record). Northern Parula Warbler (*Compsothlypis americana nsneæ*), Bronx Park, April 26th, by Messrs. J. and R. Kuerzi (early record). Black-throated Blue Warbler (*Dendroica c. caerulescens*), Van Cortlandt Park, April 27th, by Mr. Cruickshank (early record). Chestnut-sided Warbler (*Dendroica pensylvanica*), Van Cortlandt Park, April 27th, by Mr. Cruickshank (early record). Black-throated Green Warbler (*Dendroica virens*) common, April 26th; first, April 22nd, by Mr. L. N. Nichols. Palm Warbler (*Dendroica p. palmarum*),

Bronx Park, April 22nd, by Mr. L. N. Nichols. Prairie Warbler (*Dendroica discolor*), Bronx Park, April 24th, by Mr. Ruff (early record for New York Region). Northern Yellow Throat (*Geothlypis t. trichas*), Bronx Park, April 23rd, by Dr. Eliot (earliest locality record). Catbird (*Dumetella carolinensis*), Van Cortlandt Park, April 16th, by Mr. Hickey (early record for the New York Region); also April 27th, by Mr. Cruickshank and April 28th, at Bronx Park, by Messrs. J. and R. Kuerzi. Winter Wren (*Nannus h. hiemalis*), Bronx Park, April 28th, by Messrs. J. and R. Kuerzi. Wood Thrush (*Hylocichla mustelina*), Van Cortlandt Park, April 26th, by Mr. Kassoy and Herbert.

Central Park: Notes furnished by Mrs. Mead, with additional observers mentioned. April 21st, House Wren (*Troglodytes a. aedon*) (earliest date). April 23rd, Meadowlark (*Sturnella m. magna*) and American Bittern (*Botaurus lentiginosus*), by Mr. and Miss Capen, Drs. Eliot and Denton. April 25th, Wood Thrush (*Hylocichla mustelina*) (earliest date). April 27th, a remarkable and record-breaking wave—39 species being present: Crested Flycatcher (*Myiarchus crinitus*) (earliest date); Least Flycatcher (*Empidonax minimus*); Scarlet Tanager (*Piranga erythromelas*) (seen by Mr. Curtiss, earliest date); Worm-eating Warbler (*Helmitheros vermivorus*) (5 seen by Mr. Griscom and Mr. Curtiss, earliest date); Blue-winged Warbler (*Vermivora pinus*) (seen by Messrs. Griscom and Curtiss, earliest date); Nashville Warbler (*Vermivora r. rubricapilla*) (earliest date for Park); Yellow Warbler (*Dendroica æ. æstiva*) (seen by Messrs. Griscom and Watson); Chestnut-sided Warbler (*Dendroica pensylvanica*) (seen by Mr. Curtiss, earliest date); Palm Warbler (*Dendroica p. palmarum*) (seen by Messrs. Griscom and Watson); Ovenbird (*Seiurus aurocapillus*) (seen by Mr. Curtiss); Northern Water Thrush (*Seiurus n. noveboracensis*) (Messrs. Griscom, Watson, Curtiss and Sidebottom); Catbird (*Dumetella carolinensis*) (Mr. Curtiss); Wood Thrush (*Hylocichla mustelina*) (Mr. Curtiss); Veery (*Hylocichla f. fuscescens*) (Mr. Curtiss).

Washington Square, New York City, a Yellow-bellied Sapsucker (*Sphyrapicus v. varius*), April 24th (Mr. Matuszewski).

Dyker Heights, Brooklyn: Grasshopper Sparrow (*Ammodramus savannarum australis*), April 27th (Mr. Nathan).

Flushing, Long Island: American Bittern (*Botaurus lentiginosus*) pumping and snapping its bill, and 17 Wilson's Snipe (*Gallinago delicata*), April 18th (Mr. Eaton).

Long Beach, Long Island: On April 19th, Piping Plover (*Ægialitis meloda*), 30; 1,000 Double-crested Cormorants (*Phalacrocorax a. auritus*); 1 Pigeon Hawk (*Falco c. columbarius*); 16 Brant (*Branta bernicla glaucogastra*); 1 Red-throated Loon (*Gavia stellata*), by Mr. Hix and others. Same day, 4 Clapper Rail (*Rallus c. crepitans*) and 1 Seaside Sparrow (*Passerherbulus m. maritimus*), by Mr. Eaton. On April 26th, 1 Gannet (*Sula bassana*); 500 Double-crested Cormorants (*Phalacrocorax a. auritus*); 15 Semipalmated Sandpipers (*Ereunetes pusillus*); 1 Red-backed Sandpiper (*Pelidna alpina sakhalina*); 1 Spotted Sandpiper (*Actitis macularia*); 1 Prairie Warbler (*Dendroica discolor*), by Messrs. Ruff and Matuszewski.

Mastic, Long Island: April 18th, Short-billed Marsh Wren (*Cistothorus stellaris*), by Messrs. J. T. Nichols and Baker (earliest date for the New York City Region).

Staten Island, N. Y.: By Messrs. J. and R. Kuerzi, April 25th: 500 Bonaparte's Gulls (*Larus philadelphia*); 40 Laughing Gulls (*Larus atricilla*) (earliest record for the New York City Region); 1 Black-backed Gull (*Larus marinus*); 3 Least Sandpipers (*Pisobia minutilla*) and 2 Canada Geese (*Branta c. canadensis*).

Oakwood Beach: By Mr. Hickey, Piping Plover (*Ægialitis meloda*), April 17th.

Englewood Region: April 11th, Barn Swallow (*Hirundo erythrogastra*), by Mr. Pangburn. On April 18th, 2 Cliff Swallows (*Petrochelidon l. lunifrons*), by Mr. Cruickshank. On April 26th, by Messrs. Griscom, Walsh, Nathan and Dr. Eliot, 74 species, with best previous list for date 55; among the records, Pied-billed Grebe (*Podilymbus podiceps*) (latest); Green-winged Teal (*Nettion carolinense*) (latest); Shoveller (*Spatula clypeata*), 2 pairs (latest); Green Heron (*Butorides v. virescens*); Solitary Sandpiper (*Helodromas s. solitarius*) (Mr. Griscom and Dr. Eliot, earliest); Spotted Sandpiper (*Actitis macularia*) (Messrs. Walsh and Nathan, earliest); Pigeon Hawk (*Falco c. columbarius*) (Mr. Griscom and Dr. Eliot); Short-eared Owl (*Asio flammeus*) (Messrs. Walsh and Nathan, latest); Whip-poor-will (*Antrostomus v. vociferus*) (earliest); Chimney Swift (*Chaetura pelagica*); Bank Swallow (*Riparia riparia*); Chestnut-sided Warbler (*Dendroica pensylvanica*) (earliest); Black-throated Green Warbler (*Dendroica virens*) (earliest); Ovenbird (*Seiurus aurocapillus*); Water Thrush (*Seiurus n. noveboracensis*) (Mr. Griscom and Dr. Eliot); Redstart (*Setophaga ruticilla*) (ties earliest); House Wren (*Troglodytes a.*

aedon); Wood Thrush (*Hylocichla mustelina*) (earliest); Veery (*Hylocichla f. fuscescens*) (earliest).

Elizabeth, N. J.: On April 25th, Pintail (*Dafla acuta*) (latest local); American Bittern (*Botaurus lentiginosus*), showing white plumes while on the ground and in flight with much bill-snapping. On April 26th, Pine Warbler (*Dendroica vigorsi*), Water Thrush (*Seiurus n. noveboracensis*) and Veery (*Hylocichla f. fuscescens*) (Mr. Urner).

Barnegat, N. J.: April 19th, Messrs. Carter, Jaques and Urner, Laughing Gull (*Larus atricilla*) (15); Indigo Bunting (*Passerina cyanea*).

The remainder of the evening was devoted to a review of recent bird-banding results. President Nichols mentioned a number of interesting observations by banders: an adult Cowbird (*Molothrus a. ater*) feeding a young bird of the species; a family group of Song Sparrows (*Melospiza melodia*), an adult and two young, which apparently remained together during the winter; evidence of continued mating of a pair of Song Sparrows. A letter from Mr. Boulton, now on an African expedition, was also read.

May 12, 1925.—Thirty-three members and thirty-four guests.

Mr. H. E. Riegenback, of 36 Wall St., New York, was elected a member of the Society.

Among the field notes submitted were the following:

Dutchess County, N. Y.: By Mr. Crosby: Black and White Warbler (*Mniotilta varia*), April 22nd (Mr. Kiemle); Chimney Swift (*Chætura pelagica*), April 24th (Mr. Kiemle); Wood Thrush (*Hylocichla mustelina*), April 25 (Mr. Frost); Whip-poor-will (*Antrostomus v. vociferus*); Least Flycatcher (*Empidonax minimus*) and Nashville Warbler (*Vermivora r. rubricapilla*), April 26th (Messrs. Gray, Kiemle and Crosby); Pipit (*Anthus rubescens*), April 27th (Mr. Gray); Yellow Warbler (*Dendroica æ. æstiva*), April 28th (Mr. Gray); Baltimore Oriole (*Icterus galbula*), Warbling Vireo (*Vireosylva g. gilva*), Chestnut-sided Warbler (*Dendroica pensylvanica*) and Veery (*Hylocichla f. fuscescens*), April 29th (Messrs. Frost and Kiemle); Yellow-throated Vireo (*Laniivireo flavifrons*) and Golden-winged Warbler (*Vermivora chrysoptera*), April 30th (Mr. Crosby); Long-billed Marsh Wren (*Telmatodytes p. palustris*), May 3rd; Lesser Yellow-legs (*Totanus flavipes*), May 5th; Yellow-breasted Chat (*Icteria v. virens*), Cerulean (*Dendroica cerulea*), Cape May (*Dendroica tigrina*), Bay-breasted (*Dendroica castanea*) and Blackburnian War-

blers (*Dendroica fusca*), May 9th (Mr. Griscom). On May 10th, Messrs. Crosby, Griscom and Baker found 106 species, and with Messrs. Frost and Moulton in the southern part of the county, the total list was 117. Among the day's records were 2 Pintails (*Dafla acuta*), King Rail (*Rallus elegans*), Duck Hawk (*Falco perigrinus anatum*) (breeding), both Cuckoos (*Coccyzus a. americanus* and *C. erythrophthalmus*), White-crowned (*Zonotrichia l. leucophrys*), Lincoln's (*Melospiza l. lincolni*) and Grasshopper Sparrows (*Ammodramus savannarum australis*), Orange-crowned (*Vermivora c. celata*), Palm (*Dendroica p. palmarum*), Tennessee (*Vermivora peregrina*) and Wilson's Warblers (*Wilsonia p. pusilla*), Brown Creeper (*Certhia familiaris americana*), Winter Wren (*Nannus h. hiemalis*), Short-billed Marsh Wren (*Cistothorus stellaris*) and Hermit Thrush (*Hylocichla guttata pallasi*). At Amenia, N. Y., Mr. Edw. Spingarn reported Red-headed Woodpecker (*Melanerpes erythrocephalus*) and Blackburnian Warbler (*Dendroica fusca*), May 9th and Ruby-throated Hummingbird (*Archilochus colubris*) and White-eyed Vireo (*Vireo g. griseus*), May 10th.

Westchester County: Dickenson Pond, Croton-on-the-Hudson, Mrs. Fry reported a long list May 10th and 11th, including Yellow-billed Cuckoo (*Coccyzus a. americanus*), May 11th; Indigo Bunting (*Passerina cyanea*), May 11th; Red-eyed Vireo (*Vireosylva olivacea*), May 11th, and Prairie Warbler (*Dendroica discolor*), May 11th. Region of Chappaqua and Mt. Kisco: Tennessee Warbler (*Vermivora peregrina*), May 2nd, by Mr. Pangburn and Mr. and Mrs. Carll Tucker; White-crowned Sparrow (*Zonotrichia l. leucophrys*), May 9th, by Mr. and Mrs. Pangburn and Mrs. Tucker; Brewster's Warbler (*Vermivora pinus* × *V. crysoptera*) and Ruby-throated Hummingbird (*Archilochus colubris*), May 10th, Mr. Pangburn; Black-billed Cuckoo (*Coccyzus erythrophthalmus*) and Bobolink (*Dolichonyx oryzivorus*), May 10th, Mrs. Tucker. Mamaroneck: Baltimore Oriole (*Icterus galbula*), May 3rd, Messrs. L. N. and E. G. Nichols. Saxon Woods: Water Thrush (*Seiurus n. noveboracensis*), May 3rd, Messrs. L. N. and E. G. Nichols.

Bronx Region: Bronx Park: Loon (*Gavia immer*), May 10th (Messrs. J. and R. Kuerzi and Cruickshank); Sora (*Porzana carolina*), May 9th (Messrs. J. and R. Kuerzi); Kingbird (*Tyrannus tyrannus*), May 10th (Messrs. J. and R. Kuerzi); Wood Pewee (*Myiochanes virens*), May 10th (Mr. Cruickshank); Crested Flycatcher (*Myiarchus crinitus*), May 6th (Messrs. L. N. and E. G.

Nichols); Slate-colored Junco (*Junco h. hyemalis*), May 11th (Messrs. J. and R. Kuerzi); Lincoln's Sparrow (*Melospiza l. lincolni*), May 12th (Messrs. J. and R. Kuerzi); Rose-breasted Grosbeak (*Zamelodia ludoviciana*), May 6th (Messrs. L. N. and E. G. Nichols); Indigo Bunting (*Passerina cyanea*), May 10th (Mr. Cruickshank); Scarlet Tanager (*Piranga erythromelas*), May 11th (Messrs. J. and R. Kuerzi); Bobolink (*Dolichonyx oryzivorus*), May 9th (Messrs. J. and R. Kuerzi); Warbling Vireo (*Vireosylva g. gilva*), May 2nd (Mr. Cruickshank); Red-eyed Vireo (*Vireosylva olivacea*), May 10th (Messrs. J. and R. Kuerzi); Yellow-throated Vireo (*Lanivireo flavifrons*), May 10th (Mr. Cruickshank); Solitary Vireo (*Lanivireo s. solitarius*), May 10th (Messrs. J. and R. Kuerzi); Worm-eating Warbler (*Helmitheros vermivorus*), May 11th (Mr. Cruickshank); Golden-winged Warbler (*Vermivora chrysoptera*), May 4th (Messrs. J. and R. Kuerzi); Tennessee Warbler (*Vermivora peregrina*), May 11th (Messrs. J. and R. Kuerzi); Cape May Warbler (*Dendroica tigrina*), May 10th (Messrs. Matuszewski, Kessler, Kassoy and others); also seen May 11th and 12th; Blackpoll (*Dendroica striata*), May 11th (Messrs. J. and R. Kuerzi); Palm Warbler (*Dendroica p. palmarum*), May 4th and 9th (Messrs. J. and R. Kuerzi); Hooded Warbler (*Wilsonia citrina*), May 2nd and 11th (Messrs. Cruickshank and J. and R. Kuerzi); Carolina Wren (*Thryothorus l. ludovicianus*), May 9th (Messrs. J. and R. Kuerzi); Gray-checked Thrush (*Hylocichla a. aliciae*), May 11th (Messrs. Hickey and Cruickshank); Hermit Thrush (*Hylocichla guttata pallasi*), May 11th (Mr. Cruickshank). Van Cortlandt Park: Florida Gallinule (*Gallinula galeata*), May 6th (Mr. Kassoy); Red-headed Woodpecker (*Melanerpes erythrocephalus*), May 6th (Mr. Cruickshank); Least Flycatcher (*Empidonax minimus*), May 10th (Mr. L. N. Nichols); Canadian Warbler (*Wilsonia canadensis*), May 6th (Mr. Cruickshank); Hermit Thrush (*Hylocichla guttata pallasi*), May 12th (Mr. Hix); Hunts Point: Loon (*Gavia immer*), May 12th (Mr. Hickey); Florida Gallinule (*Gallinula galeata*), May 6th (Mr. Kassoy); Wilson's Snipe (*Gallinago delicata*), May 6th (Mr. Kassoy); Lesser Yellow-legs (*Totanus flavipes*), 3, May 6th (Mr. Kassoy), and 1 May 9th (Mr. Hickey), also 2 reported May 10th with Greater (*Totanus melanoleucus*) (Messrs. Kessler, Kassoy and J. and R. Kuerzi); Short-eared Owl (*Asio flammeus*), calling May 6th (Mr. Kassoy); Long-billed Marsh Wren (*Telmatodytes p. palustris*), May 3rd (Mr. Hickey). Kingsbridge: 2 Carolina Wrens (*Thryothorus l. ludovicianus*), May 7th (Mr. Cruickshank).

Fort Lee Ferry: 1 Laughing Gull (*Larus atricilla*), May 2nd (Mr. Baker).

New York Bay: 1 Laughing Gull (*Larus atricilla*) May 3rd (Mr. Kassoy and Mr. Matuszewski).

Central Park: Reported by Mr. Griscom: On May 2nd, small flight, including Yellow-throated Vireo (*Lanivireo flavifrons*) and Magnolia Warbler (*Dendroica magnolia*) (earliest); Long-billed Marsh Wren (*Telmatodytes p. palustris*) (third record). On May 4th Baltimore Oriole (*Icterus galbula*), Scarlet Tanager (*Piranga erythromelas*), Red-eyed Vireo (*Vireosylva olivacea*), Golden-winged Warbler (*Vermivora chrysoptera*) (Mr. C. Johnston—earliest). On May 7th, Cape May Warbler (*Dendroica tigrina*). On May 8th, Cape May (*Dendroica tigrina*) and Black-throated Blue Warbler (*Dendroica c. caerulescens*). On May 9th, small flight—Rose-breasted Grosbeak (*Zamelodia ludoviciana*) (Mrs. Mead). On May 11th, a big wave, chiefly the first May group, including Kingbird (*Tyrannus tyrannus*) (Mr. Spingarn); 4 Cape May Warblers (*Dendroica tigrina*) and Blackburnian (*Dendroica fusca*) (Mrs. Mead); also White-eyed Vireo (*Vireo g. griseus*), Indigo Bunting (*Passerina cyanea*) (Mr. C. Johnston), Olive-backed (*Hylocichla ustulata swainsoni*) and Gray-checked Thrush (*Hylocichla a. aliciae*). May 12th records included Fish Hawk (*Pandion haliaetus carolinensis*); Rusty Blackbird (*Euphagus carolinus*) (Messrs. Griscom and Hix—latest); Yellow-breasted Chat (*Icteria v. virens*) (Messrs. Hix and Rosen).

Dyker Heights, Brooklyn: Florida Gallinule (*Gallinula galeata*), Coot (*Fulica americana*) and Pied-billed Grebe (*Podilymbus podiceps*), May 12th (Mr. Hix). Least Sandpiper (*Pisobia minutilla*), April 29th and Sora Rail same date (Messrs. Eaton and Nathan). White-crowned Sparrow (*Zonotrichia l. leucophrys*), May 8th (Messrs. Eaton and Nathan). Long-billed Marsh Wren (*Telmatodytes p. palustris*), May 1st (Mr. Nathan).

Prospect Park, Brooklyn: Tennessee Warbler (*Vermivora peregrina*), May 9th (Mr. Nathan).

Baldwin, Long Island: Adult Yellow-crowned Night Heron (*Nyctanassa violacea*) seen by Mr. K. Baasch on May 3rd.

Battery Park, New York: Louisiana Water Thrush (*Seiurus motacilla*), May 5th, by Mr. Nathan; and by Mr. Pangburn, May 11th, 11 species including Catbird (*Dumetella carolinensis*), Ovenbird (*Seiurus aurocapillus*), Towhee (*Pipilo e. erythrophthalmus*), Maryland Yellow-throat (*Geothlypis t. trichas*), White-throated Sparrow

(*Zonotrichia albicollis*), Redstart (*Setophaga ruticilla*), Brown Thrasher (*Toxostoma rufum*), House Wren (*Troglodytes a. aedon*), Olive-backed Thrush (*Hylocichla ustulata swainsoni*), Swamp Sparrow (*Melospiza georgiana*) and Black and White Warbler (*Mniotilta varia*).

Englewood, N. J.: 2 Shovellers (*Spatula clypeata*), May 2nd, by Mr. Hickey (latest); 2 Green-winged Teal (*Nettion carolinense*), May 3rd, by Mr. Kuerzi (latest); pair American Mergansers (*Mergus americanus*), May 3rd, by Messrs. Kuerzi and Kessler; Least Sandpiper (*Pisobia minutilla*), May 3rd, by Mr. Griscom (earliest); Warbling Vireo (*Vireosylva gilva gilva*), May 2nd, by Mr. Hickey (earliest); Red-eyed Vireo (*Vireosylva olivacea*), May 2nd, by Mr. Hickey; Baltimore Oriole (*Icterus galbula*), May 2nd, by Mr. Hickey (earliest); Hooded Warbler (*Wilsonia citrina*), May 2nd, by Mr. Hickey; Winter Wren (*Nannus h. hiemalis*), May 3rd, by Mr. Griscom; Long-billed Marsh Wren (*Telmatodytes p. palustris*), May 3rd by Messrs. Nathan and Walsh.

Boonton, N. J.: Pied-billed Grebe (*Podilymbus podiceps*), Wood Duck (*Aix sponsa*), Yellow-billed Cuckoo (*Coccyzus a. americanus*) and Short-billed Marsh Wren (*Cistothorus stellaris*), May 9th, by Messrs. Eaton and Urner. On May 10, Mr. Carter reported the Short-billed Marsh Wren (*Cistothorus stellaris*) in numbers in its usual breeding fields, while none has been present there, and only a few some distance away, on the preceding day.

Elizabeth, N. J.: Messrs. Eaton and Urner reported 93 species May 10th, including a partially albino Pintail (*Dafla acuta*); a Lesser Yellow-legs (*Totanus flavipes*), a Short-eared Owl's (*Asio flammeus*) nest with 7 eggs, and a Cape May Warbler (*Dendroica tigrina*).

Princeton, N. J.: May 2nd and 3rd: Messrs. Rogers and Urner reported 75 species, including a flock of 7 Lesser Yellow-legs (*Totanus flavipes*), Least Bittern (*Ixobrychus exilis*) and nests of Great Horned Owl (*Bubo v. virginianus*) and Barred Owl (*Strix v. varia*), both with well grown young.

The paper of the evening was by Mr. Ludlow Griscom, who described the ornithology of the Bronx Region fifty years ago, based on the observations of the late E. P. Bicknell, from 1872 to 1900, at Riverdale and vicinity. Mr. Bicknell up to 1884 has listed 207 species. He added only 2 or 3 after that date, and 2 or 3 records are open to question. Mr. Griscom suggested, and President Nichols seconded the suggestion, that a resumé of the records of Mr. Bicknell, compared with

present day conditions in the area be published in connection with the next abstract of the proceedings of the Society.

May 26, 1925.—Twenty-four members and twenty-six guests.

The following new members were elected: Mrs. Ellis Parker Butler, 242 State Street, Flushing, Long Island; Mr. Carl Tucker, 733 Park Avenue, New York City.

Among the field notes submitted were the following:

Long Beach, Long Island: May 17th, Old Squaw (*Harelda nyemalis*), 2; Red-backed Sandpiper (*Pelidna alpina sakhalina*), 2, by Mr. Hix. May 23rd, adult Hudsonian Godwit (*Limosa hæmastica*), by Mr. John Kuerzi. May 24th, Ruby-throated Hummingbird (*Archilochus colubris*), Horned Grebe (*Colymbus auritus*), White-rumped Sandpiper (*Pisobia fuscicollis*), and Water Thrush (*Seiurus n. noveboracensis*), by Mr. Eaton; same day, 14 Dowitchers (*Macrorhamphus g. griseus*), 8 Knots (*Tringa canutus*), 7 Red-backed Sandpipers (*Pelidna alpina sakhalina*), Piping Plover (*Ægialitis meloda*), young and nest with eggs by Messrs. Baker, Janvrin, Ingle and Nathan.

Dyker Heights, Brooklyn: May 16, Black Tern (*Hydrochelidon nigra surinamensis*); Common Tern (*Sterna hirundo*), 3; by Messrs. Ogburn and Rosen. On May 21st, Double-crested Cormorant (*Phalacrocorax a. auritus*) and Lesser Yellow-legs (*Totanus flavipes*) by Mr. Nathan.

Amenia, N. Y.: May 23, Mourning Warbler (*Oporornis philadelphia*), and May 24th, Acadian Flycatcher (*Empidonax virescens*), Nighthawk (*Chordeiles v. virginianus*) and Short-eared Owl (*Asio flammeus*), by Messrs. Ogburn and Spingarn.

Stony Point, Tompkins Cove and vicinity: May 16th, Least Sandpiper (*Pisobia minutilla*), Broad-winged Hawk (*Buteo platypterus*). On May 17th, 4 Wood Ducks (*Aix sponsa*), Florida Gallinule (*Gallinula galeata*), Turkey Vulture (*Cathartes aura septentrionalis*), Fish Crow (*Corvus ossifragus*), Orchard Oriole (*Icterus spurius*), and Tennessee Warbler (*Vermivora peregrina*), by Messrs. Eaton, Holmes, Miss Woodward and others.

Dutchess County: May 16th, Canada Geese (*Branta c. canadensis*), 7, by Mr. Springarn. May 17th, 112 species by Dr. Murphy, Messrs. Crosby, Pangburn and Urner; with others working different parts of the county, 123 species; the list included Pipit (*Anthus rubescens*), Lincoln's (*Melospiza l. lincolni*) and White-crowned Sparrow (*Zono-*

trichia l. leucophrys), Cerulean Warbler (*Dendroica cerulea*) and nesting Duck Hawk (*Falco peregrinus anatum*).

Bronx Region: May 12th, Henslow's Sparrow (*Passerherbulus h. henslowi*), at Hunts Point by Mr. Herbert. May 13th, Slate-colored Junco (*Junco h. hyemalis*), at Botanical Gardens, by Mr. Kessler. American Merganser (*Mergus americanus*), Ruby-throated Hummingbird (*Archilochus colubris*), Bay Breasted (*Dendroica castanea*) and Wilson Warblers (*Wilsonia p. pusilla*), at Bronx Park, by Mr. Kuerzi. Lawrence's Warbler (*Vermivora "lawrencei"*), at Sawmill Lane, by Mr. L. N. Nichols. On May 14th, Orchard Oriole (*Icterus spurius*), at Bronx Park, by Mr. Cruickshank. White-eyed Vireo (*Vireo g. griseus*) and 3 Cape May Warblers (*Dendroica tigrina*), at Bronx Park, by Mr. Kuerzi. On May 16th, Golden-winged (*Vermivora chrysoptera*), Tennessee (*Vermivora peregrina*), 8 Cape Mays (*Dendroica tigrina*) and Hooded Warbler (*Wilsonia citrina*), at Bronx Park, by Mr. Kuerzi. Solitary Vireo (*Lanivireo s. solitarius*), at Bronx Park, by Mr. Cruickshank. White-crowned Sparrow (*Zonotrichia l. leucophrys*), at Hunts Point, by Messrs. Hickey, Kassoy and others. On May 17th, Bronx County Bird Club saw 106 species including Acadian Flycatcher (*Empidonax virescens*); also 6 Loons (*Gavia immer*), Red-headed Woodpecker (*Malanerpes erythrocephalus*), Yellow-billed Cuckoo (*Coccyzus a. americanus*), 20 Bobolinks (*Dolichonyx oryzivorus*) and Cliff Swallow (*Petrochelidon l. lunifrons*), by Mr. Hickey. On May 19th, Solitary Vireo (*Lanivireo s. solitarius*), at Bronx Park, by Mr. Kuerzi; Lincoln's Sparrow (*Melospiza l. lincolni*), at Hunts Point, by Messrs. Hickey and Kassoy. On May 20th, Warbling Vireo (*Vireosylva g. gilva*), nesting in the Bronx, by Mr. Cruickshank. On May 21st Cape May (*Dendroica tigrina*), at Bronx Park, by Mr. Kuerzi; Mourning Warbler (*Oporornis philadelphia*), at King's Bridge, by Mr. Cruickshank. On May 23rd, Tennessee Warbler (*Vermivora peregrina*), at Pelham, by Mr. Hickey. On May 24th, in Bronx Park, quite a wave of warblers, including Cape May (*Dendroica tigrina*); also Red-backed Sandpiper (*Pelidna alpina sakhalina*), and Barn Owl (*Aluco pratincola*) (dead), at Hunts Point, by Mr. Kuerzi and others; also Yellow-bellied Flycatcher (*Empidonax flaviventris*), at Botanical Gardens, by Mr. Kessler. On May 26th, Purple Finch (*Carpodacus p. purpureus*), at King's Bridge, by Mr. Cruickshank.

Oakwood Beach: May 23rd, 4 Knots (*Tringa canutus*), 12 Red-backed Sandpipers (*Pelidna alpina sakhalina*), by Mr. Ruff and others.

Chappaqua, N. Y.: Nesting Short-billed Marsh Wren (*Cistothorus*

stellaris) and Marsh Hawk (*Circus hudsonius*), by Mr. Pangburn.

Central Park: May 10, Brewster's Warbler (*Vermivora pinus* × *V. chrysoptera*), by Miss Samek. May 15, Tennessee Warbler (*Vermivora peregrina*), by Dr. Eliot. May 16th, wave with birds abundant: Worm-eating Warbler (*Helminthos vermivorus*) and Golden-winged Warbler (*Vermivora chrysoptera*), by Mr. and Miss Capen; Blackburnian Warbler (*Dendroica fusca*), by Mrs. Mead. May 17th, 8 Cedar Waxwings (*Bombycilla cedrorum*), by Mr. Baker and Night-hawk (*Chordeiles v. virginianus*), by Mrs. Mead. On May 18th, Orchard Oriole (*Icterus spurius*) (first in 12 years), and Hermit Thrush (*Hylocichla guttata pallasi*) (latest date), by Mr. Griscom. On May 19th, Ruby-throated Hummingbird (*Archilochus colubris*), by Mrs. Mead. On May 20th, a good flight: Wood Pewee (*Myiochanes virens*), Yellow-bellied Flycatcher (*Empidonax flaviventris*), Hooded Warbler (*Wilsonia citrina*), Bay Breasted Warbler (*Dendroica castanea*), by Mr. Griscom. On May 22nd, Broad-winged Hawk (*Buteo platypterus*), by Mr. Griscom. On May 23rd, Lincoln's Sparrow (*Melospiza l. lincolni*), by Miss Capen. On May 24th, Tennessee Warbler (*Vermivora peregrina*), by Miss Capen. On May 25th, a remarkable flight for so late, including Whip-poor-will (*Antrostomus v. vociferus*) (latest date), by Mr. Spingarn; Cliff Swallow (*Petrochelidon l. lunifrons*); Solitary Vireo (*Lamivireo s. solitarius*) (latest date), by Mr. and Miss Capen; Myrtle Warbler (*Dendroica coronata*), by Mr. Griscom; Hermit Thrush (*Hylocichla guttata pallasi*) (latest date), by Mr. Watson. On May 26th, Tennessee Warbler (*Vermivora peregrina*), by Mr. and Miss Capen; Kentucky Warbler (*Oporornis formosus*), by Mr. Griscom.

Newton, N. J.: May 16, 105 species, including King Rail (*Rallus elegans*) (heard); Greater Yellow-legs (*Totanus melanoleucus*); Olive-sided Flycatcher (*Nuttallornis borealis*); Yellow-bellied Flycatcher (*Empidonax flaviventris*); Alder Flycatcher (*Empidonax traillii alnorum*), and Lincoln's Sparrow (*Melospiza l. lincolni*), by Messrs. Griscom, J. M. Johnson and Dr. Eliot.

Millington, N. J., about Dead River: May 2nd and 3rd, few birds; May 23rd and 24th, Red-headed Woodpecker (*Melanerpes erythrocephalus*), by Mr. Hix.

Englewood, N. J.: May 17th, 99 species by Messrs. Walsh and Nathan.

Bernardsville, N. J.: Mid-May list included Wilson's Snipe (*Gallinago delicata*), Lesser Yellow-legs (*Totanus flavipes*), 8 Turkey Vul-

tures (*Cathartes aura septentrionalis*) and 5 Black-crowned Night Herons (*Nycticorax n. naevius*), by Mrs. Fry.

Boonton, N. J.: May 17th, 104 species and Brewster's Warbler (*Vermivora pinus* \times *V. chrysoptera*); Henslow's Sparrow (*Passerherbulus h. henslowi*) (first for the region); Great Blue Heron (*Ardea h. herodias*) (latest); Common Tern (*Sterna hirundo*) (second record); Black Tern (*Hydrochelidon nigra surinamensis*) (first record); Red-throated Loon (*Gavia stellata*) (first record) by Messrs. Carter, Howland and Griscom.

Wyanokie, N. J.: Brewster's Warbler (*Vermivora pinus* \times *V. chrysoptera*), banded 1922, taken 1923 and 1924. Hooded Warbler (*Wilsonia citrina*), banded July 4th, 1923; first seen as return May 30th, 1924. Prairie Warbler (*Dendroica discolor*), May 24th, by Mr. Carter.

Oradell, N. J.: Barn Owl (*Aluco pratincola*) nest in dead chestnut 20 feet from the ground by Mr. Ralph J. Holmes.

Plainfield, N. J.: May 17th, Mr. W. DeWitt Miller, 86 species all day.

Elizabeth, N. J.: May 15th, 118 species, including 3 Wood Ducks (*Aix sponsa*); Yellow Palm Warbler (*Dendroica palmarum hypochrysea*); Hermit Thrush (*Hylocichla guttata pallasii*); Solitary Vireo (*Lanius s. solitarius*); Wilson's Snipe (*Gallinago delicata*); Blue-gray Gnatcatcher (*Polioptila c. caerulea*); Yellow-throated Warbler (*Dendroica d. dominica*) (first locality record); partial albino Pintail (*Dafila acuta*); 4 Woodcocks (*Philohela minor*); Broad-winged Hawk (*Buteo platypterus*), by Mr. Urner.

Barnegat, N. J.: May 23rd, 24th and 25th, total 103 species. On May 23rd, Canada Goose (*Branta c. canadensis*); May 24th, Black Tern (*Hydrochelidon nigra surinamensis*); May 25th, to Little Island Beach, 2 Brant (*Branta bernicla glaucogastra*), American Scoters (*Oidemia americana*), Black Skimmers (*Rynchops nigra*), etc., by Messrs. Crosby, Griscom, Weber and Urner.

On the subject of the spring migration Mr. Griscom said:

"A particularly good spring, the best since 1913 and 1915, with practically all rarest transients recorded. It was notable for the tendency of a few individuals to arrive very early and for the majority of individuals of a given species to be rather late. It was also notable for the number of days on which there were marked flights, and the relative absence of really big waves (only one such on May 11th). As a result the migration of many transient species has been unusually

protracted and a larger number of individuals than usual has been recorded, notably the Lincoln's Sparrow (*Melospiza l. lincolni*), the Nashville (*Vermivora r. rubricapilla*), Cape May (*Dendroica tigrina*), and Wilson's Warblers (*Wilsonia p. pusilla*). As illustrating these remarks, 104 species to date in Central Park, and I have seen 211 species in the vicinity of New York City in spite of very little work in the winter, and making no effort to make a special trip for any special species. The Blackburnian Warbler (*Dendroica fusca*) is the only transient I can think of at the moment whose numbers were below par.

"On the group-arrival system in my book I should describe the May species as follows: Group 1—chiefly April 27 and May 11. Group 2—chiefly May 11. Group 3—chiefly May 11, 12 and 16. Group 4—chiefly May 16, 20, 21, 24 and 25. Group 5—chiefly May 21, 24, 25 and 26."

October 13, 1925.—Twenty-nine members and seventeen guests.

The resignation of Mr. J. T. Nichols as president of the Society was announced.

The Secretary reported to the Society the nomination by the Council of Dr. E. R. P. Janvrin for the presidency. He was unanimously elected.

The nomination of Mr. L. N. Nichols for the vice-presidency by the Council was then announced and he was unanimously elected.

Mr. F. M. Capen was elected to fill the unexpired term of Mr. L. N. Nichols on the Council.

The Secretary reported on the action of the Council to provide funds for the refreshments at the A. O. U. convention reception at the Museum, Tuesday evening, November 10th, and to set aside a sum not exceeding \$100 to finance a field trip on Saturday following the convention for visiting members, also to prepare a field card for the use of the members of the Society.

Mr. Baker reported a dividend of \$441.53 credited to the Society's account upon the merger of the Freestone Savings Bank with the Portland Trust Company.

The evening was devoted to the submission of field notes by members.

Mr. Griscom reported that while August and September had been very poor for land birds, particularly warblers, October had been the best since 1907. He submitted records as follows:

Riverdale, Bronx Region: Nashville Warbler (*Vermivora r. rub-*

ricapilla), August 18th, earliest date. Whip-poor-will (*Antrostomus v. vociferous*), August 30th, on migration. Carolina Wren (*Thryothorus l. ludovicianus*), pair, August 1st, to date.

Central Park: Olive-sided Flycatcher (*Nuttallornis borealis*), September 3rd; Crested Flycatcher (*Myiarchus crinitus*), September 17th, latest date; Pigeon Hawk (*Falco c. columbarius*), earliest, and Lincoln's Sparrow (*Melospiza l. lincolni*), second fall record, both seen September 22nd, by Mr. Crosby; White-eyed Vireo (*Vireo g. griseus*), October 8th, latest, Messrs. Crosby and Watson; Pigeon Hawk (*Falco c. columbarius*), October 13th, latest, and Spotted Sandpiper (*Actitis macularia*), October 13th, latest, by Mr. Watson.

Englewood Region: Common Tern (*Sterna hirundo*), September 27th, latest; also 1 drake Gadwall (*Chaulelasmus streperus*), first for Northern New Jersey; Widgeon (*Mareca americana*), earliest, and Pintail (*Dafila acuta*), earliest, September 27th. On October 4th, with Messrs. Baker, Eaton and Eliot, 79 species to which Mr. Watson added 7 additional, making 86, a record October day for Englewood Region. Among the records were: Wood Duck (*Aix sponsa*); Woodcock (*Philohela minor*); Wood Pewee (*Myiochanes virens*) (latest); Bobolink (*Dolichonyx oryzivorus*), fairly common, very late; Barn Swallow (*Hirundo erythrogastra*); Cape May (*Dendroica tigrina*), latest; Wilson's Warbler (*Wilsonia p. pusilla*) (latest); Carolina Wren (*Thryothorus l. ludovicianus*); Short-billed Marsh Wren (*Cistothorus stellaris*) (second record); Wood Thrush (*Hylocichla mustelina*) (latest).

Mr. Griscom also reported a Goshawk (*Astus a. atricapillus*), shot, October 7th, 1925, by Mr. Justus von Lengerke at Stag Lake, Sussex County, N. J., the earliest date for the region.

Mr. Hix reported 8 Little Blue Herons (*Florida cærulea*) on New Lake, Interstate Park; 2 Northern Phalaropes (*Lobipes lobatus*) at Dyker Heights, Brooklyn, May 27th; 1 Horned Grebe (*Colymbus auritus*) and 7 Red-breasted Mergansers (*Mergus serrator*) at Long Beach, June 3rd. At Newton, N. J., Palm Warbler (*Dendroica p. palmarum*), September 20th; Pine Siskin (*Spinus pinus*) and Lincoln's Sparrow (*Melospiza l. lincolni*), September 21st; Yellow Warbler (*Dendroica æ. æstiva*), September 20th; 2 immature Florida Gallinules (*Gallinula galeata*), September 20th. At Millington, N. J., several Red-headed Woodpeckers (*Melanerpes erythrocephalus*), October 10th and 12th.

Mr. Nathan reported definite breeding evidence of the Pied-billed

Grebe (*Podilymbus podiceps*) and Coot (*Fulica americana*), at Dyker Heights, Brooklyn.

Mr. Crosby reported from Dutchess County, N. Y., Pine Warbler (*Dendrocia vigorsi*), nested successfully 50 feet up in a Pitch Pine on bank of the Huson at Rhinebeck. A Barn Owl (*Aluco pratincola*) was found incubating 5 eggs on June 23rd at New Hackensack, N. Y.; young still in the nest August 15th; a second nest found near Poughkeepsie. Egrets (*Herodias egretta*) in various parts of Dutchess County, July 15th to September 5th. Parula Warbler (*Compsothlypis americana usneæ*), July 29th; Water Thrush (*Seiurus n. noveboracensis*) and Red-breasted Nuthatch (*Sitta canadensis*), July 31st; Lawrence's Warbler (*Vermivora "lawrencei"*) (third county record), August 1st; Coot (*Fulica americana*), August 2nd. After that date no migration noted for several weeks and September was warm and migration very ordinary. A cold wave October 9th and 10th: On October 9th, Canada Goose (*Branta c. canadensis*); October 10th, Ruddy Duck (*Erismatura jamaicensis*); October 11th, with Messrs. Frost and Griscom an all day census, total 76 species, including all three grebes, 11 species of ducks, among them a Gadwall (*Chaulelasmus streperus*); also 2 Turkey Vultures (*Cathartes aura septentrionalis*). Thousands of birds flying south in the late afternoon. On October 12th, 53 species, including 8 not seen the day before, and a Rough-legged Hawk (*Archibuteo lagopus sancti-johannis*).

Mr. Chubb spoke briefly of his experiences with the bird life of Bonaventure Island. He remarked particularly on the beauty of the song of the White-winged Crossbill (*Loxia leucoptera*), which had a duration of nine seconds. He estimated the number of Gannets (*Sula bassana*) seen at 10,000.

Mr. Carter reported a Connecticut Warbler (*Oporornis agilis*) and large flocks of Pine Siskins (*Spinus pinus*) at West Milford, Passaic County, N. J., on October 12th.

Mr. Pangburn had seen 5 Egrets (*Herodias egretta*) from train August 12th at Milford, Conn.

Mr. L. N. Nichols reported a successful summer in the Cranberry Lake Region of Saint Lawrence County, N. Y. Of special interest was the occurrence of the Acadian Chickadee (*Penthestes hudsonicus littoralis*) at low levels in several parts of the region and the adjacent Adirondacks. On June 21st, above Coytesville, N. J., Mr. Nichols with Messrs. E. G. and J. G. Nichols reported a singing Scarlet Tanager (*Piranga erythromelas*) with plumage dull olive and wings

a dusky brown. At Ladentown, Rockland County, N. Y., a Red-headed Woodpecker (*Melanerpes erythrocephalus*). At Hunts Point, August 30th, 3 Turnstones (*Arenaria i. morinella*) and 14 Dowitchers (*Macrorhamphus g. griseus*). In Bronx Park, September 25th, 4 Yellow Palm Warblers (*Dendroica palmarum hypochrysea*) (early); and 4 White-crowned Sparrows (*Zonotrichia l. leucophrys*) (early). In Sawmill Lane, same date, 2 Red-headed Woodpeckers (*Melanerpes erythrocephalus*). In Bronx Botanical Gardens, 11 Yellow-throated Vireos (*Lanivireo flavifrons*), September 25th, an unusual number. In Bronx Park, October 11th, 2 Ovenbirds (*Seiurus aurocapillus*) (late record). Mr. Nichols had also seen a Duck Hawk (*Falco peregrinus anatum*) at Hunts Point eating a small sandpiper.

Mr. Hickey, usually with other members of the Bronx Bird Club, reported the following:

Van Cortlandt Park, May 28th, Yellow-bellied Flycatcher (*Empidonax flaviventris*); September 27th, Connecticut Warbler (*Oporornis agilis*).

Hunts Point, June 2nd, Black-bellied Plover (*Squatarola squatarola*) and both peeps; June 7th, American Merganser (*Mergus americanus*); July 2nd, Tree Swallow (*Iridoprocne bicolor*); July 3rd, Great Blue Heron (*Ardea h. herodias*); July 6th, Scaup (*Marila sp.?*) and Solitary Sandpiper (*Helodromas s. solitarius*); August 27th, Migrant Shrike (*Lanius ludovicianus migrans*); September 20th, Red-backed Sandpiper (*Pelidna alpina sakhalina*); September 26th, Golden Plover (*Charadrius d. dominicus*); September 1st to October 12th, Pigeon Hawks (*Falco c. columbarius*) (seen by Mr. Herbert). Mr. Hickey reported shore birds not up to the numbers seen in 1924 at Hunts Point, and the migration concluded, on the whole, much earlier.

Baychester, Bronx, June 18th, Alder Flycatcher (*Empidonax trailli alnorum*).

Long Beach, May 30th, with Messrs. Herbert, Kassoy and Matuszewski, Black Rail (*Creciscus jamaicensis*), Ruby-throated Hummingbird (*Archilochus colubris*), Yellow-bellied Flycatcher (*Empidonax flaviventris*), Lincoln's Sparrow (*Melospiza l. lincolni*) (first record), Parula Warbler (*Compsothlypis americana usneæ*), Bay-breasted (*Dendroica castanea*), Blackpoll (*Dendroica striata*), Wilson's (*Wilsonia p. pusilla*) and Canadian Warblers (*Wilsonia canadensis*), Ovenbird (*Seiurus aurocapillus*), Redstart (*Setophaga ruticilla*), Veery (*Hylocichla f. fuscescens*), Olive-backed (*Hylocichla ustulata swainsoni*) and Gray-cheeked Thrush (*Hylocichla a. aliciae*). One June 1st

in the "Oasis," Water Thrush (*Seiurus n. noveboracensis*), Redstart (*Setophaga ruticilla*), Magnolia (*Dendroica magnolia*), Myrtle (*Dendroica coronata*), Bay-breasted (*Dendroica castanea*), Wilson's (*Wilsonia p. pusilla*), Parula (*Compsothlypis americana usneæ*) and Chestnut-sided Warblers (*Dendroica pensylvanica*); also Veery (*Hylocichla f. fuscescens*), Olive-backed Thrush (*Hylocichla ustulata swainsoni*) and a small flycatcher. On October 12th, 2 Wilson's Snipe (*Gallinago delicata*), Winter Wren (*Nannus h. hiemalis*) and Red-tailed Hawk (*Buteo b. borealis*).

Bronx Park, Chimney Swift (*Chætura pelagica*), October 11th.

Oakwood Heights, S. I., with Mr. Matuszewski, 1 Upland Plover (*Bartramia longicauda*), August 7th.

Boonton, N. J., June 23, 72 species, including Tree Swallow (*Iridoprocne bicolor*).

Elizabeth, N. J., August 16th, 3 Bonaparte's Gulls (*Larus philadelphia*) and 5 Ring-billed Gulls (*Larus delawarensis*). September 13th, Forster's Tern (*Sterna forsteri*) and Purple Martin (*Progne subis subis*).

Dyker Heights, Brooklyn, August 23rd, Knot (*Tringa canutus*).

Central Park, August 23rd, Nashville Warbler (*Vermivora rubricapilla*); September 22nd, Hairy Woodpecker (*Dryobates v. villosus*).

New York Bay, August 23rd, Least Tern (*Sterna antillarum*) and Black Tern (*Hydrochelidon nigra surinamensis*).

Englewood, N. J., August 30th, 4 Olive-sided Flycatchers (*Nuttallornis borealis*).

Mr. Hickey also spoke briefly of summer field work in Berkshire County, Mass.

Mr. Eaton reported a Great Horned Owl (*Bubo v. virginianus*), at Lake Waccabuc, June 28th; a Stilt Sandpiper (*Micropalama himantopus*), at Dyker Heights, Brooklyn, August 18th, and a Parasitic Jaeger (*Stercorarius parasiticus*) and Carolina Wren (*Thryothorus l. ludovicianus*), at Blue Point, near Bellport, August 16th.

Mr. Baker reported Green Heron (*Butorides v. virescens*) and Chimney Swift (*Chætura pelagica*) at Westwood, N. J., October 10th; Laughing Gull (*Larus atricilla*) from Fort Lee Ferry, October 10th, and a Tennessee Warbler (*Vermivora peregrina*), in Central Park, October 11th.

Mrs. Smith from Point O'Woods, Fire Island, reported Northern Water Thrush (*Seiurus n. noveboracensis*), July 31st to October 8th, daily records until mid-September; Carolina Wren (*Thryothorus l.*

ludovicianus), August 4th to October 4th; Red-headed Woodpecker (*Melanerpes erythrocephalus*), August 30th, 31st and September 1st, flights of immature birds, several remaining a few days.

The Secretary read a letter from Mr. Roy Latham of Orient, Long Island, reporting a Brown Creeper (*Certhia familiaris americana*) in late June, not his first June record for the locality. In interesting contrast with the full migration during the spring of 1925 about New York City, Mr. Latham reported a very poor spring for birds in the Orient Region. "I have never before recorded so few warblers and some other species as this, the spring of 1925," he wrote.

Mr. Urner discussed the unusual visitation of southern birds along the New Jersey Coast during the summer. He mentioned five Mockingbird (*Mimus p. polyglottos*) records between May and October; an unusual number of Carolina Wrens (*Thryothorus l. ludovicianus*); one record of Migrant Shrike (*Lanius ludovicianus migrans*); large numbers of Little Blue Herons (*Florida cærulea*) and Egrets (*Herodias egretta*); records of immature Yellow-crowned Night Herons (*Nyctanassa violacea*) from Little Island Beach, Point Pleasant and Elizabeth, at least 6 individuals, and large numbers of Forster's Terns (*Sterna forsteri*), reaching a maximum of 75 on August 30th at Point Pleasant, and a maximum of 62 September 19th at Elizabeth. Roseate Terns (*Sterna dougalli*) were less plenty than in 1924 and Black Terns (*Hydrochelidon nigra surinamensis*) scarcer, with main flight fully three weeks later than in 1924. The colony of Black Skimmers (*Rynchops nigra*) at Little Island Beach when visited August 9th, contained fully 300 individuals, many young on the wing, while some nests still contained young, newly hatched and eggs. A Black Rail (*Creciscus jamaicensis*) had been seen on the Barnegat marshes and a Western Sandpiper (*Ereunetes mauri*) taken September 7th. Jaegers were unusually plentiful along the coast of New Jersey. At Point Pleasant a maximum of 11 Parasitic (*Stercorarius parasiticus*), September 13th and 1 Pomarine (*Stercorarius pomarinus*) September 6th, two of the latter being seen at Barnegat Inlet, October 10th, by Mr. J. A. Weber. Evidence of a large early flight of northern finches was seen in numbers of Siskins (*Spinus pinus*) and Purple Finches (*Carpodacus p. purpureus*) about Barnegat Light on October 11th. At Elizabeth, records included 8 singing Savannah Sparrows (*Passerculus sandwichensis savanna*), June 6th; Hudsonian Godwit (*Limosa hæmastica*), July 3rd (breeding plumage); Willet (*Catoptrophorus s. semipalmatus*), September 11th; Philadelphia Vireo (*Vireosylva phila-*

delphica), September 26th. A big warbler wave was noted October 12th, with 11 species, including Bay-breasted (*Dendroica castanea*), Magnolia (*Dendroica magnolia*), Palm (*Dendroica p. palmarum*), Louisiana Water Thrush (*Seiurus motacilla*) and Connecticut (*Oporornis agilis*).

Mr. Charlton Ogburn, Jr., reported from Lake Waccabuc 1 juvenile Great Blue Heron (*Ardea h. herodias*), June 27th; 4 Egrets (*Herodias egretta*), July 6th; 1 Broad-winged Hawk (*Buteo platypterus*); Tree Swallow's (*Iridoprocne bicolor*) nest found June 15th; Parula Warbler (*Compsothlypis americana usneæ*), June 15th to July 15th; Cliff Swallow (*Petrochelidon l. lunifrons*), common transient; Prairie Warbler (*Dendroica discolor*), uncommon summer resident. At Overpeck Creek 1 Yellow-billed Cuckoo (*Coccyzus a. americanus*), October 11th.

Miss Capen gave a most interesting comparison of the bird life at Winchendon, Mass., as observed by her and her brother, Mr. Frederick Mortimer Capen, the past summer with records from the same locality thirty-seven years previous compiled by Mr. William Brewster. Mr. Brewster's list contained 82 birds; Mr. and Miss Capens' 66. Twenty-five on Mr. Brewster's list were not on the Capens' list, while 9 on the Capens' were not on his. White-throated Sparrow (*Zonotrichia albicollis*) was much commoner in 1925 than in 1887 and 1888; Nashville Warbler (*Vermivora r. rubricapilla*) had also increased, as had Black-throated Blue (*Dendroica c. caerulescens*), but Blackburnian (*Dendroica fusca*) had become rare, while in Mr. Brewster's time it was common.

Mr. Cleaves told of a Ruby-throated Hummingbird (*Archilochus colubris*) observed from a Sound Steamer on September 5th, avoiding the wind by flying close to the waves after the manner of sea-birds accustomed to water travel.

Mr. Kassoy reported the following records:

Grassy Sprain Reservoir: June 28th, Cooper's Hawk (*Accipiter cooperi*).

Hunts Point: Western Sandpiper (*Ereunetes mauri*), July 10th; 16 Dowitchers (*Macrorhamphus g. griseus*) and 2 Pectoral Sandpipers (*Pisobia maculata*), July 14th; Migrant Shrike (*Lanius ludovicianus migrans*), August 26th.

Interstate Park: July 4th, Golden-winged Warbler (*Vermivora*

chrysoptera). On road to Bear Mountain, July 5th, Brewster's Warbler (*Vermivora pinus* × *V. chrysoptera*).

Long Beach: With Mr. Matuszewski, July 26th, 2 Egrets (*Herodias egretta*), 1 Willet (*Catoptrophorus s. semipalmatus*), 2 Stilt Sandpipers (*Micropalama himantopus*). On August 2nd, 3 Egrets (*Herodias egretta*), 20 Stilt Sandpipers (*Micropalama himantopus*), 100 Pectoral Sandpipers (*Pisobia maculata*) on Lido Golf Links.

Overpeck Creek: Dowitchers (*Macrorhamphus g. griseus*), August 1st and 1 Blue-winged Teal (*Querquedula discors*) and Redhead (*Marila americana*), August 15th, with Messrs. Matuszewski and Herbert.

Mr. Matuszewski reported 7 Little Blue Herons (*Florida cærulea*) at Oakwood Beach, July 18th.

Mr. Allan Cruickshank submitted the following records:

Bronx Park: June 6, nest of Virginia Rail (*Rallus virginianus*) and a Florida Gallinule (*Gallinula galeata*); September 20th, Stilt Sandpiper (*Micropalama himantopus*); September 25th, Winter Wren (*Nannus h. hiemalis*), Short-billed Marsh Wren (*Cistothorus stellaris*), Lincoln's Sparrow (*Melospiza l. lincolni*).

Van Cortlandt Park: September 3rd, Blue-gray Gnatcatcher (*Polioptila c. cærulea*); October 4th, Wood Pewee (*Myiochanes virens*); September 19th, over 1,000 Broad-winged Hawks (*Buteo platypterus*) migrating, also Pigeon Hawk (*Falco c. columbarius*), Cooper's Hawk (*Accipiter cooperi*) and Osprey (*Pandion haliaetus carolinensis*); October 10th, Arctic Three-toed Woodpecker (*Picoides arcticus*).

Hunts Point: July 13, 20 Lesser Yellow-legs (*Totanus flavipes*); 6 Dowitchers (*Macrorhamphus g. griseus*); 2 Pectoral Sandpipers (*Pisobia maculata*); 1 Western Sandpiper (*Ereunetes mauri*); 1 Scaup (*Marila sp.?*). On August 31st, Golden Plover (*Charadrius d. dominicus*).

Baychester: September 4th, Little Blue Heron (*Florida cærulea*); September 14th, Egret (*Herodias egretta*) and Yellow-bellied Sapsucker (*Sphyrapicus v. varius*).

Kings Bridge: September 15th, Palm Warbler (*Dendroica p. palmarum*); September 23rd, Bobolink (*Dolichonyx oryzivorus*); October 7th, White-crowned Sparrow (*Zonotrichia l. leucophrys*).

Dyker Heights, Brooklyn: June 10, Loon (*Gavia immer*); September 26th, Least Bittern (*Ixobrychus exilis*) and Forster's Tern (*Sterna forsteri*).

Bayville, L. I.: 14 Common Terns (*Sterna hirundo*) and 2 Least Terns (*Sterna antillarum*), July 8th.

Long Beach: September 2nd, Migrant Shrike (*Lanius ludovicianus migrans*).

Staten Island: June 7th, Horned Grebe (*Colymbus auritus*), Woodcock (*Philohela minor*), 26 Turnstones (*Arenaria i. morinella*).

Westwood, N. J., 14 Bob-whites (*Colinus v. virginianus*).

Englewood, N. J.: Alder Flycatcher (*Empidonax trailli alnorum*), singing, July 4th.

Among the records presented by Messrs. John and Richard Kuerzi were the following:

Jerome Reservoir: July 21st, 9 Laughing Gulls (*Larus atricilla*).

Riverdale, Bronx: August 16th, Little Blue Heron (*Florida cærulea*).

Baychester: August 22nd, 1 Egret (*Herodias egretta*); 1 Savannah Sparrow (*Passerculus sandwichensis savanna*) (may breed there); September 9th, Upland Plover (*Bartramia longicauda*) (new locality record), and Migrant Shrike (*Lanius ludovicianus migrans*); September 14th, Stilt Sandpiper (*Micropalama himantopus*) and Black Tern (*Hydrochelidon nigra surinamensis*) on Eastchester Bay.

Hunts Point: 3 Hudsonian Curlew (*Numenius hudsonicus*) (new locality record) on July 23rd; several Pipits (*Anthus rubescens*) on August 28th; Forster's Tern (*Sterna forsteri*) on September 23rd.

Van Cortlandt Park: September 12th, 2 Carolina Wrens (*Thryothorus l. ludovicianus*); October 12th, White-crowned Sparrow (*Zonotrichia l. leucophrys*).

Bronx Park: September 10th, Lawrence's Warbler (*Vermivora "lawrencei"*) (first seen by Mr. Kessler); September 26th, Winter Wren (*Nannus h. hiemalis*) and Bay-breasted Warbler (*Dendroica castanea*); October 4th, Pine Siskins (*Spinus pinus*), Chickadees (*Penthestes a. atricapillus*) abundant and at least two dozen Yellow-bellied Sapsuckers (*Sphyrapicus v. varius*).

Long Beach: August 3rd, 10 Stilt Sandpipers (*Micropalama himantopus*); 1 Egret (*Herodias egretta*). On August 10th, 1 Willet (*Catoptrophorus s. semipalmatus*), 1 Stilt Sandpiper (*Micropalama himantopus*) and 40 Pectoral Sandpipers (*Pisobia maculata*).

Staten Island: August 17th, 2 Forster's Terns (*Sterna forsteri*) with Common Terns (*Sterna hirundo*), also 10 Bonaparte's Gulls (*Larus philadelphia*).

Boonton, N. J.: June 23, 1 White-throated Sparrow (*Zonotrichia albicollis*) and 2 Tree Swallows (*Iridoprocne bicolor*).

Englewood, N. J.: August 20th, Alder Flycatcher (*Empidonax trailli alnorum*), singing; Golden-winged (*Vermivora chrysoptera*), Nashville (*Vermivora r. rubricapilla*) and Bay-breasted Warblers (*Dendroica castanea*).

Elizabeth, N. J., salt marsh: September 20th, 1 Golden Plover (*Charadrius d. dominicus*) and over 50 Forster's Terns (*Sterna forsteri*).

Mr. Kuerzi also told of the bird life of the Laurentian Mountains of Canada observed by him.

Mr. P. Kessler reported the following:

Van Cortlandt Park: September 12th, Blue-winged Warbler (*Vermivora pinus*); October 12th, White-crowned Sparrow (*Zonotrichia l. leucophrys*).

Bronx Botanical Gardens: September 24th, Winter Wren (*Nannus h. hiemalis*).

Baychester Marshes: September 19th, 2 Migrant Shrikes (*Lanius ludovicianus migrans*) and 1 Upland Plover (*Bartramia longicauda*).

Long Beach: May 30th, Cliff Swallow (*Petrochelidon l. lunifrons*), Wilson's Warbler (*Wilsonia p. pusilla*), Magnolia Warbler (*Dendroica magnolia*), Canadian Warbler (*Wilsonia canadensis*) and Parula Warbler (*Compsothlypis americana usneæ*).

Elizabeth, N. J., salt marsh: 1 Forster's Tern (*Sterna forsteri*), 1 Egret (*Herodias egretta*), 1 Pectoral Sandpiper (*Pisobia maculata*) and 3 Golden Plover (*Charadrius d. dominicus*).

Mr. Kessler also told of the summer bird life about Flatbrookville, N. J., along the Delaware River in the northwestern part of the State. On July 4th he had seen a Little Blue Heron (*Florida cærulea*). A Brewster's Warbler (*Vermivora pinus* × *V. chrysoptera*) had been observed feeding a young bird, and a Magnolia Warbler (*Dendroica magnolia*) feeding young (first evidence of the breeding of this species in New Jersey); also a Carolina Wren (*Thryothorus l. ludovicianus*).

Oakwood Beach: May 27: 2 Ring-billed Gulls (*Larus delawarensis*); 1 Great Black-backed Gull (*Larus marinus*); 1 Glaucous Gull (*Larus hyperboreus*); 16 Knots (*Tringa canutus*) and 12 Red-backed Sandpipers (*Pelidna alpina sakhalina*).

Miss Samek and Mrs. Rich reported 2 Blue-gray Gnatcatchers (*Polioptila c. cærulea*) at Central Park, September 10th.

October 27, 1925.—Twenty-nine members and eleven guests.

Mr. Caryl Stryker of Staten Island Museum was elected a member of the Society.

It was decided to omit the first November meeting of the Society because of conflict with the A. O. U. Convention.

The meeting was devoted to a discussion of field identification of our local gulls and terns, led by Mr. Ludlow Griscom, and participated in by Dr. Dwight, Messrs. J. T. Nichols, Baker and others.

November 24, 1925.—Twenty-nine members and 26 guests.

Among the field notes presented were the following:

Boonton, N. J.: 50 Coots (*Fulica americana*) on reservoir November 1st, by Messrs. Cleaves and Howland; also 40 Tree Sparrows (*Spizella m. monticola*) same date.

Dutchess County, N. Y.: Orange-crowned Warbler (*Vermivora c. celata*), October 15th, and Evening Grosbeak (*Hesperiphona v. vespertina*), November 1st, reported by Mr. Crosby, latter collected by Mr. Griscom.

Arlington, N. J.: 1 Evening Grosbeak (*Hesperiphona v. vespertina*) seen by Mr. Marks.

Dyker Heights, Brooklyn: Flock of Pine Grosbeaks (*Pinicola enucleator leucura*) seen November 3rd by Mr. Nathan; Yellow-crowned Night Heron (*Nyctanassa violacea*) reported by Messrs. Hix and Nathan November 1st; Snow Buntings (*Plectrophenax n. nivalis*) November 15th and Coot (*Fulica americana*) and Pied-billed Grebe (*Podilymbus podiceps*) November 22nd by Mr. Hix; Ipswich Sparrow (*Passerculus princeps*) October 24th by Mr. Hix.

Long Beach: Mr. Griscom reported the result of the A. O. U. field trip November 13th on which 36 species were seen, including Brunnich's Murre (*Uria l. lomvia*) and 2 Acadian Sharp-tailed Sparrows (*Passerherbulus nelsoni subvirgatus*). Snow Buntings were unusually common.

Hackensack River, near Riverdale, N. J.: 3 Wood Ducks (*Aix sponsa*) and 4 Hooded Mergansers (*Lophodytes cucullatus*), November 22nd, by Mr. Griscom.

West Point, N. Y.: 2 Arctic Three-toed Woodpeckers (*Picoides arcticus*) seen during October by Col. W. Robinson, reported by Mr. Griscom.

Central Park: Miss Capen reported Cowbird (*Molothrus a. ater*), October 28th; Woodcock (*Philohela minor*), November 6th; Pine Sis-

kin (*Spinus pinus*), November 18th; Yellow Palm Warbler (*Dendroica palmarum hypochrysea*), November 18th.

Englewood, N. J.: Arctic Three-toed Woodpecker (*Picoides arcticus*), October 18th, by Messrs. Kassoy, Herbert and Hickey. Yellow-billed Cuckoo (*Coccyzus a. americanus*), October 18th, by Messrs. Kassoy and Herbert. Sora (*Porzana carolina*), November 1st, by Mr. Kuerzi.

Hunts Point: Barn Owl (*Aluco pratincola*), November 14th, by Messrs. Hickey and Cruickshank; 2 Black-bellied Plover (*Squatarola squatarola*), November 14th, by Mr. Cruickshank; Golden Plover (*Charadrius d. dominicus*) and White-rumped Sandpiper (*Pisobia fuscicollis*), October 17th, by Mr. Cruickshank; Brown Thrasher (*Toxostoma rufum*) and Greater Yellow-leg (*Totanus melanoleucus*), November 22nd, by Mr. Hickey; 2 Red-backed Sandpipers (*Pelidna alpina sakhalina*), November 3rd, by Mr. Kuerzi.

Mt. Kisco: Arctic Three-toed Woodpecker (*Picoides arcticus*) seen by Mrs. Tucker, October 12th.

Bronx Park: Pine Warbler (*Dendroica vigorsi*), November 7th, by Mr. Kuerzi; 8 Bob-whites (*Colinus v. virginianus*), November 14th, by Mr. Kuerzi; Rough-legged Hawk (*Archibuteo lagopus sanctijohannis*), November 17th, by Mr. L. N. Nichols.

Eastchester Bay: 8 Golden-eyes (*Clangula c. americana*), November 24th, by Mr. L. N. Nichols.

Van Cortlandt Park: 2 Chimney Swifts (*Chaetura pelagica*), October 17th, by Mr. Kuerzi; 4 Blackpolls (*Dendroica striata*), October 18th, by Mr. Cruickshank; many White-crowned Sparrows (*Zonotrichia l. leucophrys*), October 17th and 18th; Solitary Vireo (*Lani-vireo s. solitarius*), October 24th, by Mr. Kuerzi; 4 Lapland Longspurs (*Calcarius l. lapponicus*), November 3rd to 14th, by Messrs. Kuerzi and Cruickshank; 2 Evening Grosbeaks (*Hesperiphona v. vespertina*), November 15th, by Mr. Kuerzi; 4 Pintails (*Dafla acuta*) and 42 Wood Ducks (*Aix sponsa*), October 24th, by Mr. Cruickshank; 2 Pied-billed Grebes (*Podilymbus podiceps*) and 1 Barred Owl (*Strix v. varia*), October 31st, by Mr. Cruickshank; 8 Hooded Mergansers (*Lophodytes cucullatus*), October 31st, by Mr. Cruickshank; 1 Gannet (*Sula bassana*) in Hudson, October 21st and 1 Snow Bunting (*Plectrophenax n. nivalis*), November 14th, by Mr. Cruickshank.

Grassy Sprain Reservoir: Spotted Sandpiper (*Actitis macularia*) and Yellow-billed Cuckoo (*Coccyzus a. americanus*), October 18th, by Messrs. Kuerzi and Kessler. Also Henslow's Sparrow (*Passerherb-*

ulus h. henslowi) and Orange-crowned Warbler (*Vermivora c. celata*) by Mr. Kuerzi.

Pelham Bay: Black-throated Green Warbler (*Dendroica virens*), October 31st, by Messrs. Kuerzi and Kessler.

Jerome Reservoir swamp: Sora (*Porzana carolina*), October 31st, by Messrs Kuerzi and Kessler.

Elizabeth, N. J.: Cape May Warbler (*Dendroica tigrina*), October 17th; 75 Redpolls (*Acanthis l. linaria*), October 18th; White-winged Scoter (*Oidemia deglandi*), October 25th; Forster's Tern (*Sterna forsteri*) last seen October 25th; Brown Creeper (*Certhia familiaris americana*) singing November 22nd, by Mr. Urner.

Barnegat Light, N. J.: Several thousand birds were killed night of October 23rd. Weather clear early but heavy storm and high wind later at night, with most casualties around 2 A. M., according to keeper of the light. Of those killed 426 were picked up November 3rd by Mr. Urner, these including 30 species, chiefly Myrtle Warblers (*Dendroica coronata*), White-throats (*Zonotrichia albicollis*), Swamp (*Melospiza georgiana*) and Song Sparrows (*Melospiza melodia*). The rarest finds were Acadian Sharp-tailed Sparrow (*Passerherbulus nelsoni subvirgatus*) and a small thrush identified by Mr. Griscom as Bicknell's (*Hylocichla aliciae bicknelli*).

The paper of the evening was by Mr. J. M. Johnson on "Wild Life in the Rocky Mountains." Mr. Johnson gave an interesting description of trips through the western wilds and showed many excellent and original slides. He stressed the importance of general public attention to our national parks to offset the constant efforts of encroachment by the lumber interests.

December 8, 1925.—Thirty-three members and thirty-one guests.

The following members were elected: Mrs. J. E. B. Webster, 16 Davis Place, East Orange, N. J.; Mr. K. W. Baasch, Baldwin, L. I.; Mr. Geo. W. Knoblauch, 27 W. 44th St., New York City.

Mr. Davis announced the death of Mr. Lewis Bartholomew Woodruff, who died November 27th, 1925, and was buried at Litchfield, Conn., November 30th. Mr. Woodruff joined the Society in 1892 and acted as Treasurer from 1902 to 1921. He was for years actively interested in birds and other forms of life and he described eighteen species of insects, principally tree-hoppers. Appropriate resolutions were adopted:

Among the field notes submitted were the following:

Mr. J. T. Nichols reported a scattering of late migrants: At Mastic, L. I., November 28th, Catbird (*Dumetella carolinensis*), Towhee (*Pipilo e. erythrophthalmus*) and three Swamp Sparrows (*Melospiza georgiana*); at Garden City, December 6th, Savannah Sparrow (*Passerculus sandwichensis savanna*) and Pipit (*Anthus rubescens*).

At Dyker Heights, Brooklyn: Messrs. Nathan and Hix reported Brunnich's Murre (*Uria l. lomvia*) and 32 Redpolls (*Acanthis l. linaria*), November 29th, and Coot (*Fulica americana*), December 6th.

At Englewood, N. J.: Mr. L. N. Nichols reported 2 Red-breasted Nuthatches (*Sitta canadensis*) and 7 Pipits (*Anthus rubescens*), December 8th, latter late record for the locality.

At Flushing, L. I., Mr. Eaton reported Long-eared Owl (*Asio wilsonianus*), December 5th; and at Long Beach, 11 Sanderlings (*Calidris leucophæa*) and Great Blue Heron (*Ardea h. herodias*), December 6th.

At Central Park, December 7th, Mr. Gerald Morgan reported Carolina Wren (*Thryothorus l. ludovicianus*). *

About Barnegat Bay, N. J.: November 29th, Messrs. Carter, Eaton, Griscom, Jaques, Walsh and Urner saw 86 species; they hunted in three pairs from Manasquan River to Beach Haven. Among the records were 4 Jaegers, probably Parasitic (*Stercorarius sp.?*); 6 Kittiwakes (*Rissa tridactyla*); 1 Caspian Tern (*Sterna caspia*); 1 Hooded Merganser (*Lophodytes cucullatus*); 400 Canvasbacks (*Marila valisineria*); 6 Bufflehead (*Charitonetta albeola*); 25,000 Brant (*Branta b. glaucogastra*); 1 Bittern (*Botaurus lentiginosus*); 10 Sanderlings (*Calidris leucophæa*); 1 Rough-legged Hawk (*Archibuteo lagopus sancti-johannis*); 1,500 Siskins (*Spinus pinus*); 1 Ipswich Sparrow (*Passerculus princeps*); 1 Mockingbird (*Mimus p. polyglottos*); 1 Catbird (*Dumetella carolinensis*); 2 Thrashes (*Toxostoma rufum*).

At Elizabeth, N. J.: Mr. Urner reported 3 Surf Scoters (*Oidemia perspicillata*) on Newark Bay, December 6th.

Mr. Kuerzi submitted the following records:

At Long Beach: November 26th, with Mr. Watson, Holboell's Grebe (*Colymbus holbælli*); 8 Red-throated Loons (*Gavia stellata*); 4 Ipswich Sparrows (*Passerculus princeps*).

At Pelham Bay Park, with Mr. Kessler, 2 Red-throated Loons (*Gavia stellata*), the first definite Bronx record.

At Hunts Point: December 2, Great Black-backed Gull (*Larus marinus*) and Laughing Gulls (*Larus atricilla*).

At Clason Point: December 5th, 2 adult Laughing Gulls (*Larus*

atricilla) ; 4 Canvasbacks (*Marila valisineria*) and 2 Buffleheads (*Charitonetta albeola*) ; on December 8th, 1 Laughing Gull (*Larus atricilla*) and 2 Great Blue Herons (*Ardea h. herodias*).

At Eastchester and Pelham Bays: December 6th, 2 Red-throated Loons (*Gavia stellata*), 1 Holboell's Grebe (*Colymbus holbælli*), 1 Seaside Sparrow (*Passerherbulus m. maritimus*).

At Bronx Park: November 29th, Great Horned Owl (*Bubo v. virginianus*).

The subject of the evening discussion was the field identification of our local hawks, led by Mr. W. DeWitt Miller. Mr. Miller summarized the available factors aiding in field identification, such as season, habitat, form, notes, size, color and mannerisms. He then considered each species separately, dwelling on the characteristics of each in both adult and immature plumage.

Mr. Miller decried the growing destruction of hawks by gunners employing stuffed owls to attract them. He asserted that nature-lovers have some rights as well as sportsmen, and they should strive to counteract the influence of the exterminators. He pointed to Great Britain as an example of the eventual effect of slaughter since that country's native hawks have been greatly reduced in numbers and many species exterminated.

Mr. Johnson strongly endorsed Mr. Miller's stand. He believed that all our hawks are worth preserving for the pleasure they give and he offered a resolution, which was duly passed, that the president appoint a committee of three to draw up a resolution, presenting to the National Association of Audubon Societies the views of the Linnean Society on the question of hawk protection.

December 22, 1925.—Twenty-one members and twenty guests.

The Secretary announced the death of Mrs. Rena S. Holgate, of New York City, a member of the Society, and on Mr. Griscom's motion a resolution was passed instructing the Secretary to convey to Mr. Holgate the regrets and sympathies of the Society.

The following members were elected: Dr. J. G. Brody, of Flower Hospital Medical College, New York City; Mr. A. P. Thornton, Harvard Club, 27 West 44th Street, New York City; Mr. Alfred Scott Warthin, Jr., 404 West 115th Street, New York City.

Mr. J. M. Johnson reported for the special committee of which he was chosen chairman, the appointment of which was provided for

at the previous meeting of the Society. He offered the following resolution which was adopted unanimously:

RESOLUTION OF THE LINNÆAN SOCIETY OF NEW YORK TO BE PRESENTED TO
THE NATIONAL ASSOCIATION OF AUDUBON SOCIETIES

The Linnæan Society of New York has been viewing with concern the great increase in recent years of the shooting of Hawks and Owls on a large scale, especially on migration. Along certain parts of the Atlantic seaboard this shooting has developed into a new sport, and bags of over one thousand individuals of numerous species have been reported. The argument justifying this new sport is primarily that these raptorial birds are harmful in destroying grouse, ducks, and other game birds which it is desired to protect, and consequently that their killing is justified. But it is definitely proved on indisputable evidence that the great majority of the species of these birds not only do not destroy game but are positively beneficial to agriculture. Examination of the bags shows that the average hunter is entirely unable to distinguish the many beneficial from the few species that are definitely harmful in certain directions. These latter have decreased to a surprising extent in all areas where this shooting has been going on in recent years. The cruel and destructive method of trapping is also on the increase and many insectivorous and song birds are caught incidentally. It seems to us that the nature lover has as much right to the enjoyment of these birds in life as the sportsman has to kill them for the harm they do to the game he wishes to conserve. There is no reasonable doubt that the people at large have as good a right to the aesthetic enjoyment of all classes of birds as any special interest has for the destruction of any particular one. There is also no reasonable doubt that the interests of game conservation do not require the extermination of such raptorial birds as prey upon it.

In view of the above statement,

BE IT RESOLVED: That the members of the Linnæan Society of New York appeal to the National Association of Audubon Societies to use its influence by education, warden service, legislative action and other means, which it may deem advisable, to conserve Hawks and Owls;

RESOLVED: That a copy of this resolution be sent to the President, other officers and members of the Board of Directors of the National Association of Audubon Societies.

Mr. Griscom mentioned that the will of the late Mr. Lewis Bartholomew Woodruff provided that members of the Linnæan Society would have the privilege of purchasing at high price as placed by appraisal the ornithological books in the Woodruff library.

Among the field notes were the following:

Eastchester, N. Y.: Horned Grebe (*Colymbus auritus*) and 3 Bob-whites (*Colinus v. virginianus*), December 12th, by Mr. Chas. Johnston.

Dutchess County, N. Y.: Ring-necked Duck (*Marila collaris*), December 13th, by Messrs. Griscom and Crosby.

Ossining, N. Y.: December 13th, 200 Canvasbacks (*Marila valisineria*), by Mr. Eaton.

Elizabeth, N. J.: Laughing Gull (*Larus atricilla*), December 12th, on Newark Bay, and a number of the same species in New York Harbor unusually late, reported by Mr. Urner.

Bronx Region, Jerome Reservoir: 4 Laughing Gulls (*Larus atricilla*), December 12th, by Mr. Cruickshank. Van Cortlandt Park, December 19th, Wilson's Snipe (*Gallinago delicata*), Long-eared Owl (*Asio wilsonianus*) and Carolina Wren (*Thryothorus l. ludovicianus*), by Mr. Cruickshank. Pelham Bay, December 20th, Rough-legged Hawk (*Archibuteo lagopus sancti-johannis*), by Messrs. Matuszewski and Kassoy.

Mr. John Kuerzi submitted the following memorandum:

"December 9th, female Arctic Three-toed Woodpecker (*Picoides arcticus*) in Bronx Park employed as usual in chiseling the bark off a dead Hemlock. Hardly a stone's throw from the spot a female of the species was discovered in October, 1923, which remained for a week. This is the third record in as many years, in addition to two prior to 1915 by the late Mr. F. Houghton. The condition of many of the dead Hemlocks would lead one to suspect that this last bird either arrived before or was present after December 9th, as it seems doubtful that one bird could peel as many trees in one day's time.

"December 12, late Green-winged Teal (*Nettion carolinense*), at Clason Point; also 10 Buffleheads (*Charitonetta albeola*), 2 Great Blue Herons (*Ardea h. herodias*) and a Short-eared Owl (*Asio flammeus*). Great Horned Owl (*Bubo v. virginianus*) again seen in Bronx Park Hemlock grove.

"December 13th, Clason Point to Fort Schuyler with Messrs. Kassoy and R. Kuerzi, 6 Old-squaws (*Harelda hyemalis*), second record. Remains of Barn Owl (*Aluco pratincola*), third found dead in Bronx Region since last May. Also adult Shrike, probably a Migrant (*Lanius sp.?*).

"December 16th, at Hunts Point with Mr. Kessler, saw a Migrant Shrike (*Lanius ludovicianus migrans*). Had checked up carefully after seeing the bird on December 13th. This time were able to study the bird closely at leisure under excellent light conditions. Straight black bill, size and position of lores, taken in connection with clear gray color of back and the bird's small appearance would seem to make the observation conclusive."

Mr. Hickey reported that the Bronx Park Great Horned Owl (*Bubo v. virginianus*) had been trapped after killing a Gannet.

A record of European Goldfinches (*Carduelis carduelis*) seen last spring in New York City was presented, and Mr. Chas. Johnston reported that he had heard a fairly recent report of two "warbler-like" birds with red faces seen in Central Park—probably this species.

Mr. Warren F. Eaton then reviewed Mr. Edward Howe Forbush's first volume on "Birds of Massachusetts and other New England States," calling particular attention to the profuse illustrations, the large amount of information as to life histories and habits, and the number of rare species which have been recorded from the New England States. The work, Mr. Eaton described as extremely well gotten up in every detail, taking the place for Massachusetts' birds that Mr. Elon H. Eaton's book does for New York.

"Mr. Forbush," said Mr. Eaton, "has been conservative in eliminating questionable records, but has not failed to include records of well-established occurrence even when unsubstantiated by specimens—such as the White Ibis (*Guara alba*)."

In the introduction of the work a very interesting portion describes the influx of southern species into New England in the late summer and early fall, which can be synchronized with the violent weather disturbances caused by hurricanes of great magnitude. A carefully prepared map shows the northward migration of banded Black Crowned Night Herons (*Nycticorax n. naevius*), and notes at random indicate the relative abundance and regularity of capture of the European Widgeon (*Mareca penelope*) in that region; the increasing rarity of the Ruddy Duck (*Erismatura jamaicensis*), and the more abundant occurrence of northern birds like the Eiders (*Somateria*), *Alcidae*, Harlequin Duck (*Histrionicus histrionicus*) and Purple Sandpiper (*Arquatella m. maritima*) than about New York.

The remainder of the evening was devoted to a discussion of the field identification of our local owls, led by Mr. Urner.

January 12, 1926.—Twenty-two members and thirty-five guests.

Mr. Weber reported a King Rail (*Rallus elegans*) caught in a rat trap on the Overpeck Marshes, Englewood Region on December 9th.

The result of the Bronx County Bird Club Christmas census on December 27th, 1925, was announced. Ten observers, Messrs. Cruickshank, Ruff, R. Kuerzi, J. Kuerzi, Kessler, Matuszewski, Singer, Kassoy, Hickey and Herbert recorded 67 species without House Spar-

row (*Passer domesticus*), a most unusual list for the season. Notable on the list were Holboell's Grebe (*Colymbus holbælli*), American Merganser (*Mergus americanus*), the three Scoters (*Oidemia americana*; *O. fusca*; *O. deglandi*), Brant (*Branta b. glaucogastra*), Wilson's Snipe (*Gallinago delicata*), four species of owls, including Saw-whet (*Cryptoglaux a. acadica*), Red-headed Woodpecker (*Melanerpes erythrocephalus*), Cowbird (*Molothrus a. ater*), Red-winged Blackbird (*Agelaius p. phæniceus*), Rusty Blackbird (*Euphagus carolinus*), Vesper Sparrow (*Poæcetes g. gramineus*), Cedar Waxwing (*Bombycilla cedrorum*), Red-breasted Nuthatch (*Sitta canadensis*) and Ruby-crowned Kinglet (*Regulus c. calendula*).

Mr. Kassoy reported Iceland Gull (*Larus leucopterus*) on Eastchester Bay, January 10th, by Messrs. J. Kuerzi, Herbert and himself, and Barn Owl (*Aluco pratincola*), same date, near Hunters Island.

Mr. Urner reported the result of a Barnegat Bay Christmas census on December 27th, made by Dr. Eliot and Messrs. Baker, Griscom, J. M. Johnson, Walsh and himself, when 65 species, including House Sparrow (*Passer domesticus*), were observed, among them 5 Kittiwakes (*Rissa tridactyla*), 20 Great Black-backed Gulls (*Larus marinus*), 1 Green-winged Teal (*Nettion carolinense*), 3 Canvasbacks (*Marila valisineria*), 12,000 Scaup (*Marila sp.?*), 15,000 Brant (*Branta bernicla glaucogastra*), 3 Sanderlings (*Calidris leucophæa*), 5 Red-winged Blackbirds (*Agelaius p. phæniceus*), 7 Ipswich Sparrows (*Paserculus princeps*), 2 Vesper Sparrows (*Poæcetes g. gramineus*), 2 Mockingbirds (*Mimus p. polyglottos*) and 74 Robins (*Planesticus migratorius*).

Mr. Eaton at Hunts Point with Mr. Nathan reported a pair of Mallards (*Anas platyrhynchos*), January 9th, and at Bronx Park, January 10th, a wild Green-winged Teal (*Nettion carolinense*).

Mr. Carter reported the killing of a Marsh Hawk (*Circus hudsonius*) on the Maryland Coast which had been banded in the nest by him on the Elizabeth, N. J., marshes two and one-half years earlier.

The paper of the evening was by Dr. Frank R. Oastler who showed a series of remarkable slides, the results of his own photography, taken in the canyons of southwestern United States. Among the regions shown were the Blue Mountains and Shunsburg Mountains of southeastern Utah, the Glen Canyon of the Colorado and the Grand Canyon which his party traversed in canvas canoes, the third successful expedition through the region. He showed many photographs of the remains of cliff dwellers, their habitations and their work; of the

Painted Desert and of the Pueblo Indians of the Mojave Desert, their mode of life and their snake dance, graphically shown in picture.

January 26, 1926.—Twenty-five members and seventeen guests.

Mr. J. T. Nichols announced the sudden death of Dr. Ralph W. Tower and proposed the following resolution which was passed:

"Whereas our member, Dr. Ralph W. Tower, Recording Secretary of the New York Academy of Sciences, and valued friend of the members of the Linnæan Society, individually and collectively, died this morning, January 26th, 1926,

"Be It Resolved, that the Linnæan Society herewith place on the minutes its appreciation of his unusual worth, and extend deepest sympathy to his family, to whom a copy of this resolution shall be sent."

Mr. Charles Johnston reported Field Sparrow (*Spizella p. pusilla*) and Winter Wren (*Nannus hiemalis*), at Bronx Botanical Gardens, January 9th and Red-breasted Nuthatch (*Sitta canadensis*), January 16th; Grackle (*Quiscalus quiscula subsp.*), in Central Park, January 13th to 25th, and Fox Sparrow (*Passerella i. iliaca*), January 25th; over 100 Canvasbacks (*Marila valisineria*), at Hunts Point, January 23rd; American Scoter (*Oidemia americana*), at Dyker Heights, January 23rd.

Mr. L. N. Nichols reported Rough-legged Hawk (*Archibuteo lagopus sancti-johannis*), on Riverside Drive, December 17th; 3 Robins (*Planesticus migratorius*), in Bronx Park, January 26th; 2 Cardinals (*Cardinalis c. cardinalis*), at Scarsdale this winter.

Mr. Cruickshank reported Glaucous Gull (*Larus hyperboreus*) and 1,000 Scaup (*Marila sp.?*), at Hunts Point, January 15th; 8 Oldsquaw (*Harelda hyemalis*), 27 Brant (*Branta bernicla glaucogastra*), 1 Barred Owl (*Strix v. varia*) and 3 Long-eared Owls (*Asio wilsonianus*), at Pelham Bay, January 16th; Kingfisher (*Ceryle alcyon*), at Jerome Reservoir, January 17th; same day Hermit Thrush (*Hylocichla guttata pallasii*), at Bronx Park; Orange-crowned Warbler (*Vermivora c. celata*), at Inwood, January 20th. At Hunts Point, January 22nd, 8 species of ducks, including 2 Mallards (*Anas platyrhynchos*), 2,000 Canvasbacks (*Marila valisineria*) and 4 Buffleheads (*Charitonetta albeola*); at Pelham, January 23rd, Bald Eagle (*Haliaeetus l. leucocephalus*) and Barn Owl (*Aluco pratincola*).

Mr. Carter reported Northern Shrike (*Lanius borealis*), at Rhinebeck, N. Y., on January 24th.

From Elizabeth, N. J.: Mr. Urner reported 15 Field Sparrows

(*Spizella p. pusilla*) (flock), January 3rd; Northern Shrike (*Lanius borealis*), January 3rd; 6 Black-crowned Night Herons (*Nycticorax n. naevius*), wintering; Great Blue Heron (*Ardea h. herodias*) January 17th; 3 Lapland Longspurs (*Calcarius l. lapponicus*), January 17th; flock of 58 Robins (*Planesticus migratorius*), January 24th, and several other reports of flocks of Robins (*Planesticus migratorius*) same day, one flock of 50 near Ash Swamp, Plainfield, N. J., Region.

Others present had noted an increase in Robins (*Planesticus migratorius*) following the warm spell after mid-January. Mr. Howland had heard one calling in his yard in Upper Montclair; Mr. Baasch had seen several January 22nd at Baldwin, L. I.; Mr. Stryker had noted a large increase in the number about Moravian Cemetery, Staten Island, and a flock of 200, possibly wintering birds, was reported from a point in the Bronx.

Mr. Kessler reported a Great Horned Owl (*Bubo v. virginianus*), in Bronx Park.

Mr. Urner reported a December 15th record of 5 Black-bellied Plover (*Squatarola squatarola*), seen by Dr. Wm. B. Ley of Elizabeth, at Barnegat Bay, and one taken.

The speaker of the evening was Mr. J. T. Nichols of American Museum of Natural History, who discussed the field identification of our local shore birds, and some of the rarer possibilities in this region. Mr. Nichols gave many useful and original suggestions as to the utility of the stripe on the shore bird's wing as a field identification mark. Regarding the identification of the Western Sandpiper (*Ereunetes mauri*) he stated that 60 per cent of the birds of this species cannot be identified positively in the field without a gun. The Western (*Ereunetes mauri*) he described as a paler, grayer bird than the Semipalmated (*Ereunetes pusillus*), especially in the streaking on the side of the head, the young female Western having a very white head. The note he described as intermediate between the "creep" of the Least Sandpiper (*Pisobia minutilla*) and the "chuck" of the Semipalmated (*Ereunetes pusillus*), with a suggestion of an "ee," something like the squawk of a young Robin.

February 9, 1926.—Twenty-four members and nineteen guests.

Mr. J. T. Nichols mentioned a movement to secure co-operation between any members of Linnæan Society interested and the staff of American Museum of Natural History in increasing our knowledge of herpetology, particularly that relating to the New York City Region.

A motion was passed placing the matter in the hands of interested members of the Society, and a committee of five was appointed: Mr. J. A. Weber, chairman, Messrs. Breder, Carter, J. T. Nichols and J. M. Johnson.

The president also appointed a committee of three on hawk and owl protection: Mr. J. M. Johnson, chairman; Messrs. Carter and Bowdish.

Mr. J. T. Nichols reported for Mr. Coles a Gadwall (*Chaulelasmus streperus*) seen January 17 at Rye Lake.

Mr. Hickey reported a Bluebird (*Sialia s. sialis*) in Bronx County, January 31th.

Mr. Lewis Walker had seen two Goshawks (*Astur a. atricapillus*), at Douglaston, L. I., on January 29th, and Mr. Coles also sent a record of one seen in late January in Westchester County.

Mr. Cruickshank has noted two American Scoters (*Oidemia americana*) on Hudson River, January 27th; a Redhead (*Marila americana*), at Hunts Point, February 2nd; 2 Lapland Longspurs (*Calcarius l. lapponicus*), at Hunts Point, February 6th, and 3 Redpolls (*Acanthis l. linaria*), in Bronx Park, February 6th.

Mr. John Kuerzi, with Mr. P. Kessler on January 9th had seen a Glaucous Gull (*Larus hyperboreus*), at Clason Point. He reported 2 Great Blue Herons (*Ardea h. herodias*), at Pelham Park, January 23rd and 2 Rough-legged Hawks (*Archibuteo lagopus sancti-johannis*), at Pelham, January 17th; over 15 Robins (*Planesticus migratorius*), in Bronx Park, January 23rd, and about 12 January 30th; 1 Rusty Blackbird (*Euphagus carolinus*) and 250 Canvasbacks (*Marila valisineria*), at Clason Point, January 30th. On February 1st King Rail (*Rallus elegans*) was picked up dead on Hunts Point marsh, in good condition except for an injured wing—the second Bronx record for the species. Same date a Lapland Longspur (*Calcarius l. lapponicus*). On February 6th Mr. Kuerzi again found an Arctic Three-toed Woodpecker (*Picoides arcticus*) in Bronx Botanical Gardens. He also reported for Mr. F. Landis a record of same species in same locality January 10th.

The remainder of the evening was devoted to an illustrated talk on Lapland by Dr. G. Clyde Fisher of American Museum of Natural History, who described a summer expedition to that country, the mode of life of the inhabitants, and the bird, plant and mammal life encountered. Dr. Fisher had witnessed the end of a large migration of Lemming (*Lemmus lemmus*), and he stated that the periodic massed

movements of these little animals are now believed to be due to an abnormal condition, induced possibly by a contagious disease. The Lemming on migration he stated appear to "go until they die." He also visited the old home of Linnæus and was able to secure a number of excellent photographs of the personal effects and former haunts of this famous naturalist.

February 23, 1926.—Nineteen members and fourteen guests.

Mr. J. T. Nichols and Mr. Ludlow Griscom were elected Fellows of the Society in recognition of their valuable services in its behalf.

Mrs. Mead spoke of the unusually musical notes of a Grackle (*Quiscalus quiscula subsp.?*) heard in Central Park.

Mr. Kassoy reported a White-crowned Sparrow (*Zonotrichia l. leucophrys*) in Central Park on February 13th; the same species had also been reported earlier from the Park to Mr. Charles Johnston by Mr. George McMullen, who has had some experience in the field.

Mr. Baasch has trapped two Cowbirds (*Molothrus a. ater*) at Baldwin, Long Island, on February 10th and found them to be abnormally small, wing measurements 3.5 and 3.7 inches.

Mr. Eaton has seen an Iceland Gull (*Larus leucopterus*) at Oakwood Beach, Staten Island, on February 7th.

The Secretary reported for Mr. Howland an Arctic Three-toed Woodpecker (*Picoides arcticus*) heard and seen at Upper Montclair, N. J., on February 10th, and a closer view February 11th; another bird, probably the same species, being seen in the distance.

Mr. L. N. Nichols on February 16th had found an Ipswich Sparrow (*Passerculus princeps*) at Eastchester Bay, the bird being well seen, probably the first New York State record for the species on the mainland. He also found Redpolls (*Acanthis l. linaria*) at Pelham Bay Park, February 16th; and on Pelham Bay 50 Golden-eyes (*Clangula c. americana*), 8 American Mergansers (*Mergus americanus*), 1 Hooded Merganser (*Lophodytes cucullatus*) and 1 Glaucous Gull (*Larus hyperboreus*).

Mr. Tucker reported for Mr. Pangburn at Chappaqua a Red-winged Blackbird (*Agelaius p. phæniceus*), February 20th.

Messrs. Herbert and Hickey had seen 2 Grackle (*Quiscalus quiscula subsp.?*) in Bronx County, February 14th, and Mr. Herbert a Cowbird (*Molothrus a. ater*), February 6th.

Mr. Cruickshank had seen Mourning Dove (*Zenaidura macroura carolinensis*) and 3 Long-eared Owls (*Asio wilsonianus*) in Bronx

Park, February 12th; 2 Redpolls (*Acanthis l. linaria*) at Woodlawn, February 13th, and 45 Mallards (*Anas platyrhynchos*) and a pair of early Wood Ducks (*Aix sponsa*) at Van Cortlandt Swamp, February 13th.

Messrs. J. and R. Kuerzi and P. Kessler at Long Beach, February 12th, had seen an Iceland Gull (*Larus leucopterus*), 150 Snow Buntings (*Plectrophenax n. nivalis*), 20 Ipswich Sparrows (*Passerculus princeps*), 2 Short-eared Owls (*Asio flammeus*) and 45 Great Black-backed Gulls (*Larus marinus*), the latter mostly adult. They had also seen 8 Bluebirds (*Sialia s. sialis*) and 15 Myrtle Warblers (*Dendroica coronata*), between Silver Lake and Rye Pond, and at Fort Schuyler, Bronx, February 22nd, 24 Brant (*Branta bernicla glaucogastra*), 5,000 Scaup (*Marila sp.?*) 50 Canvasbacks (*Marila valisineria*) and 4 Horned Larks (*Otocoris a. alpestris*).

The paper of the evening, by Dr. Robert Cushman Murphy, dealt with the field identification of the tube-nosed swimmers (*tubinarks*). Dr. Murphy spoke of the great age of this group of birds, indicated by the fact that mid-tertiary fossils are of the same genera as birds we have today, and of the unusual range in size, from the great albatrosses to the diminutive petrels, a variation which had been explained as due to competition within the order. The birds of this order are usually pelagic, colonial in breeding habits, and gregarious, laying but one egg, either concealed in foliage or in deep burrows or clefts in rocks.

The structural weakness of the petrels as a class had, Dr. Murphy believed, forced them away from the vicinity of land, into crevices to nest, and into the darkness to feed. The incubation period is relatively long—35 days in the Storm Petrel (*Procellaria pelagica*), and 60 days in the smaller Albatross. The sexes are identical in plumage except the Great Albatross (*Diomedea exulans*), which differs from the others in undertaking nuptial display in companies, thus giving chance for sexual selection and development of differences in size and color.

The young are dependent on their parents for a long time—eight months in the large albatrosses.

Except the albatrosses, which walk freely, the order has relatively weak legs.

The types of flight differ, depending on shape and size of wings and tail and their relation. Flight is never in circles, and wings are either on same plane or bent downward. All are able to dive for food, and some swim below the water.

Dr. Murphy also described the characteristic field marks of our

local shearwaters and petrels, and possible rare visitants. Long range identification between Leach's (*Oceanodroma leucorhoa*) and Wilson's Petrels (*Oceanites oceanicus*) he said is possible by their distinctive flights. Leach's (*Oceanodroma leucorhoa*) has a "leaping flight" as the Whip-poor-will, while Wilson's (*Oceanites oceanicus*) has a "fluttering, gliding, even flight."

March 9, 1926.—The annual dinner was held at Manhattan Square Hotel; attendance 52 members and guests; and 38 members and 26 guests were present at the annual meeting.

The Secretary read his annual report as follows:

"During the past year the Linnæan Society of New York has held fifteen meetings, with a total attendance of 776, falling 79 behind the preceding year, chiefly due to the omission of a November meeting because of conflict with the A. O. U. convention.

"The thirteenth annual dinner, held in the Mitla Restaurant, March 10, 1925, was attended by 73 members and guests, and 43 members and 41 guests were present at the annual meeting the same evening.

"At the remaining fourteen meetings the attendance averaged 49.4, that of members 27.1. The average attendance of members has been the largest in the history of the Society, but the number of guests has been slightly smaller, due probably to a lesser number of popular illustrated lectures. The largest attendance during the year was 84; the smallest 33.

"The Society lost by death three resident members: Lewis Bartholomew Woodruff, Mrs. Rena S. Holgate and Dr. Ralph W. Tower. Several members have resigned or were dropped for non-payment of dues. Thirteen new members have been elected, and two members and one honorary member have been elected fellows. The membership now stands: Resident, 124; life, 3; fellows, 3; honorary members, 3; corresponding members, (elected previous to a change in the constitution omitting the class), 23; total 155.

"The subjects considered at nine of the fifteen meetings of the year were primarily ornithological, and of the remainder, five were on travel and wild life in general, while one evening was largely devoted to the adoption of a new constitution. One meeting was devoted to bird banding, and the usual two evenings entirely to field observations. Five meetings have been devoted in part to a discussion of field identification of local birds.

"During the past year, and more particularly during the spring and fall, the number of field records presented at the meetings has been largely increased. This increase is highly desirable, for much valuable data is being accumulated in the records of the proceedings. It is probable however that as the volume of field records increases, a plan of preserving them in the records in a more concise, more systematic and more easily available form should be decided upon.

"The Secretary, with the generous co-operation of several members and one non-member, has continued the collection of data indicating the seasonal abundance

of our various local birds in different sections of the New York City region, particularly the maximum numbers of each species seen in any one day as winter visitants, spring migrants, summer residents and fall migrants. This work was started in 1924 and is being undertaken to preserve information as to occurrence for future comparisons. It deserves wider support from the membership.

"The effort to encourage breeding season census work in some of the least known parts of the region, initiated last spring, met with a considerable measure of success. Under the auspices of the Society a trip was made June 12 to 15, 1925, to Lake Mashipacong, N. J., and vicinity. The territory covered was in Sussex County, chiefly in the Kittatinny Mountains, from Lake Mashipacong north almost to the New York State line; west to the Delaware River, and east to the town of Sussex. Twelve members of the Society participated. Headquarters were made at the lodge of Mr. and Mrs. Charles L. Robinson, who also procured the assistance of a number of boy scouts to act as guides, and secured for the members the use of the scout camp. Mr. and Mrs. Robinson proved royal hosts, giving those participating a memorable outing. The region, covered at the height of the breeding season, was found to be rich in bird life usually associated with the Canadian Zone. Among the 89 species observed were 2 Northern Pileated Woodpeckers (*Phlæotomus pileatus abieticola*); 4 Purple Finches (*Carpodacus p. purpureus*); 1 Solitary Vireo (*Lanivireo s. solitarius*); 18 Nashville (*Vermivora r. rubricapilla*), 1 Northern Parula (*Compsothlypus americana usneæ*), 16 Black-throated Blue (*Dendroica c. cærulescens*), 4 Blackburnian (*Dendroica fusca*) and 26 Canadian Warblers (*Wilsonia canadensis*); 14 Northern Water Thrushes (*Seiurus n. noveboracensis*) and a pair of Brown Creepers (*Certhia familiaris americana*) building their nest behind the bark of a dead Chestnut tree. The notes of a Red-breasted Nuthatch (*Sitta canadensis*) were also heard. The expedition, covering as it did some of the wildest portions of the New York City region, added definitely to our knowledge of the breeding birds of the section. There is certainly every reason to continue such co-operative breeding season work in this and other parts of the region.

"The Secretary in retiring from office wishes at this time to thank the Society for the opportunity it has offered him to assist in the work of the organization, and especially to thank Mr. T. D. Carter of the Museum for the assistance he has so generously given in the performance of no small part of the routine duties of the office.

"CHAS. A. URNER, *Secretary.*"

The report was accepted as read.

The Treasurer then read his report which was referred to the Auditing Committee—Messrs. Chubb and J. T. Nichols.

Mr. Herman Defrem of Jackson Heights, Long Island, was elected a resident member of the Society.

Nominations for officers for 1926, as made by the Council, were accepted by the meeting without opposition, each being unanimously elected.

The officers are:

PRESIDENT, Dr. E. R. P. Janvrin.

VICE-PRESIDENT, Mr. L. N. Nichols.

SECRETARY, Mr. Warren F. Eaton.

TREASURER, Mr. John H. Baker.

Three Councilors were elected for a term of three years as follows: Mr. J. T. Nichols; Mr. Geo. E. Hix; Mr. J. A. Weber.

During the balloting Mr. Crosby reported briefly on birds seen the past winter at Fort Myers and Miami, Florida, including Wilson's Plover (*Ochthodromus wilsonius*), Caracara (*Polyborus cheriway*) and Glossy Ibis (*Plegadis autumnalis*), the latter seen near Lake Okeechobee. Mr. Baker also spoke of birds seen on a recent trip to Texas.

Mr. Hickey reported a Kittiwake (*Rissa t. tridactyla*) seen at Manhattan Beach, February 27th.

Mr. Chas. Johnston had seen 30 Brant (*Branta bernicla glauco-gastra*), at Long Beach, February 20th.

Mr. Cruickshank at Kingsbridge, March 4th, reported an Iceland Gull (*Larus leucopterus*) and at Pelham Bay, March 6th, 5,000 Scaup (*Marila sp.?*), 200 Golden-eyes (*Clangula c. americana*) and 2 Killdeer (*Oxyechus vociferus*). On March 8th at Bronx Park he reported 2 Great Horned Owls (*Bubo v. virginianus*).

The speaker of the evening was Mr. Samuel H. Chubb of American Museum of Natural History, who described a recent visit to Bonaventure Island in the Gulf of St. Lawrence, and presented on the screen many excellent views of the bird life of the Island. Mr. Chubb estimated the number of Gannets (*Sula bassana*) in the colony breeding there as 15,000, a decided increase over estimates made a few years ago. He had seen about 500 Kittiwakes (*Rissa t. tridactyla*), and many Herring Gulls (*Larus argentatus*), Common Murres (*Uria t. troille*), Razor-billed Auks (*Alca torda*), Puffins (*Fratercula a. arctica*), Black Guillemots (*Cephus grylle*) and Leach's Petrels (*Oceanodroma leucorhoa*).

Foxes (*Vulpes fulva*) and Varying Hares (*Lepus americanus*) were among the mammals found.

The Observations of the Late Eugene P. Bicknell at Riverdale, New York City, Fifty Years Ago

Edited and Compiled by

LUDLOW GRISCOM

Mr. Eugene P. Bicknell, one of the founders of the Linnæan Society of New York and of the American Ornithologists' Union, was born at Riverdale in 1859 and resided there until 1901. Excellently illustrating the saying that "ornithologists are born and not made," he began collecting specimens and keeping a record of observations in 1872, at the precocious age of thirteen. Blessed with an unusual intellectual maturity, he published some popular articles in *Forest and Stream* in 1876, and his first scientific paper was written in 1878, at the age of eighteen, though it bears no evidences of such tender years. These papers were based on his earlier studies of birds around Riverdale. As much time as it was possible to devote to a hobby was given them up to 1885, when botany gradually supplanted ornithology as an avocation, and Mr. Bicknell became one of the leading amateur botanists of America. In later years he again took up the study of birds, and was planning to publish his Riverdale notes, a hope which he did not live to fulfill.

Of the present generation in the Linnæan Society, Mr. Bicknell was best known to Mr. M. S. Crosby, who prepared the memorial address for the American Ornithologists' Union. (See *Auk*, 1926, April, No. 2, pp. 143-149.) At this time, feeling convinced that Mr. Bicknell's observations were of great historical value and special local interest, I requested Mr. Crosby to secure Mrs. Bicknell's permission to examine his journals and note-books. This request was most kindly granted. After reading them, it was apparent that it would be a distinct loss to ornithology if his observations were not put on record, and I obtained Mrs. Bicknell's permission to prepare a report. Seldom if ever has a student of the present day, more or less familiar with local conditions, been privileged to contrast his findings with an authoritative picture of conditions fifty years ago in the same place. It is to be distinctly understood that I appear in this article in an editorial capacity only. I have done my best to do justice to the work of another, and to bring out its salient features. But I am keenly aware that no amount of application can ever make compilation at second hand take the place of observation at first hand. It is a thousand pities that the man of ripened powers and judgment could not himself write up the

work of the brilliant youth. To Mrs. Bicknell I express my appreciation for permission to edit her husband's records, and for assistance in locating place names now forgotten and local conditions which have since been destroyed.

Mr. Bicknell kept very elaborate and detailed journals and note-books of various kinds, taking far more trouble and devoting more time to recording his observations than the great majority of bird-students today. Not only this, but he evolved his own methods, which never required any improvement, at the age of nineteen. I do not know what method he used prior to 1878, but it is apparent that he did keep some type of record, as his observations from 1872 on were copied into a ledger, which devoted a folio to each species, and was kept up to date until 1881. There are also five note-books of various sizes and types, which constitute his daily bird-journal from November 1, 1878, to May 24, 1901. This journal was very detailed in earlier years, with numerous habit notes and accounts of observation written in narrative style. The weather, route followed, number of hours afield, number of individuals of each species seen, those heard singing, etc., were all faithfully recorded, and the birds were always listed by their scientific names, which in most cases were quite different from the ones now in use. In later years, when most of Mr. Bicknell's spare time was devoted to botany, the bird journal was reduced to incidental observation, the record of rarities, new arrivals in spring, etc., and complete daily lists were no longer given. Another folio was a catalogue of his collection of skins, and a third was devoted to data on nests and eggs. From June 15, 1879, to May 20, 1883, he also kept in two separate note-books weekly lists. These lists always include one Sunday and incidental observation around home in the morning. Their exact purpose is not clear. Many years later, judging by the handwriting, Mr. Bicknell started another ledger, a folio to each species, in which he summarized for each all the observations and records of interest. It was obviously begun after 1901, and any report by him on the birds of Riverdale would have been drawn off from this ledger, the details to be filled in from the daily bird journals. It was about three-quarters completed at the time of his death.

The area covered by Mr. Bicknell's observations was a comparatively small one, and he made no effort to go further afield in search of birds, which were not found at Riverdale. This was characteristic of the man in all his scientific work, and a matter of temperament. He preferred to study thoroughly some well loved section, aiming at com-

pleteness, rather than try for variety of experience. His "region," therefore, to use the modern term, centered around the long ridge along the Hudson River running north from Spuyten-Duyvil and lying west of Van Cortlandt Park. The Bicknell house was on the corner of Riverdale Lane and the old Albany Post Road (now Riverdale Avenue) and is now used by the Hackett School. To the south of their place was "Piggot's Cottage," and "Piggot's Swamp" was just across the road to the east. Van Cortlandt Park Swamp known as "Tibbett's Swamp," and "Tibbett's Brook" ran through it from the north into "Bibby's Pond" (now Van Cortlandt Park Lake). The country was open rural fields and pasture lands to the southward, and deep woods running north indefinitely to the east of Yonkers. On rare occasions Mr. Bicknell would go southeastward to country now wrecked by the Jerome Reservoir, where there was a chain of deep swamps in what was mostly rural country. Rarely also he would go south along what is now Broadway, or along the Harlem River which was bordered with cat-tail marshes, now destroyed by the Speedway on one side and the railroad yards on the other. But week after week, year after year, he worked Riverdale ridge and on Sundays made an excursion to Bibby's Pond and Tibbett's Brook. During the spring migration he would get up at daylight every morning and work the vicinity of his house, taking the train to town at what is now the Van Cortlandt Park station. Curiously enough Mr. Bicknell never paid any attention to the possibilities of water-birds along the Hudson River, nor did he ever make any special effort to look for Owls in winter.

In spite of these gaps, his "local list" exceeded 200 species. As a matter of historical interest, the size of his list is of no special importance, nor have the possibilities as regards transients and rare visitors altered to any material extent. It is the decrease in the permanent and summer residents that tells the story of the changes that have taken place since his day. The writer lived at Riverdale within a few hundred yards of the Bicknell house from 1917 to 1926, between the months of May and December. The contrast is graphically brought out in the following table. Only Riverdale ridge is considered.

	1872	1890	1917	1926
Permanent residents	15	15	8	6
Summer residents	64	54	29	21

It will be apparent, therefore, that the bird-life of Riverdale fifty years ago was of a variety which must now be sought in the outlying

rural sections of Westchester County and northern New Jersey, where the proper habitats or conditions survive.

The change which has taken place locally as regards transients and the rare visitors is of a different sort. Practically all the migratory species pass over Riverdale ridge just as regularly today as fifty years ago. Their temptation to alight and rest, however, has been greatly reduced by the spoiling of the woods and fields. The chief change that has taken place here, therefore, is a great reduction in the number of individuals seen per year.

It is always interesting, however, to compare the spring migration of long years ago with those of more recent years within one's own recollection. I accordingly give below a brief summary of the fourteen seasons when Mr. Bicknell was most active. For May I use the Group System adopted in my Handbook.

1875. No real signs of spring until mid-March. April normal, at the end a little backward. Group I not until May 9, 10. Group II wave missing. Group III May 21.

1876. March about normal. April at first a little late; a marked flight on the 14th and another on the 30th. Group I May 7; Groups II, III May 8; Group III May 15.

1877. March and April about normal. Very irregular in early May, no group I wave; Group II, III May 15; Group IV the 17th.

1878. Spring commenced in late February. End of March rather early. April normal; late April very early. Remarkable waves on May 2, 3 brought Group I and in part Groups II, III, exactly paralleled by events in 1911. A long period of cold, unfavorable weather then ensued. Another great wave on May 23 concluded the migration.

1879. March unusually pleasant, the first migrants on the 2nd and another wave on the 23rd. Snow on April 4 and hard frost the next three days; flights on April 13, 14; hard frost again several times until April 21; fine and warm the last week; flights on the 26th and 30th; migration normal with a few early May arrivals. Frost on May 2. Group I May 4 and 6; Groups II, III May 14; Groups III, IV May 21; Group V May 24, the best day for Warblers.

1880. Remarkably early spring, the first migrants February 15-22. Wintry weather from March 7-22. Warm the end of the month with a flight on April 4, and another on the 18th. End of April very warm, continued migration, particularly the 27th and 29th, which brought many early records for Group I. Waves of May 2 and 4 complete arrival of species in Group I. A tremendous wave on May 9 brought most of the remaining four Groups; there was no further wave. It will be noted that spring commenced a week earlier even than in 1909, and that the last May wave was a day earlier than in 1922.

1881. March about average, the first arrivals during the first week. April was rather late and irregular, marked flights only on the 9th and 27th; a wave

on April 29th brought a few early May species. Group I May 2; no Group II wave; Group III May 9; Group IV May 15; Group V May 22.

1882. No field work in March because of illness. First April flight on the 9th; migration scattered and poor until the end of the month; waves on April 29th, 30th again bringing Group I birds. Big wave on May 7th completed arrival of Group I. Two weeks of cold, rainy weather, the temperature dropping below 40 every night. Tremendous wave on May 21st brought Groups II, III, IV (76 species observed). Another big wave on May 28th, Group V (78 species). Continued cold during the month, the foliage not fully out until June 10th.

1883. March about normal, the first migrants on the 2nd. April very backward throughout, heavy snow on April 29th. Group I May 8; Groups II, III May 16; Group IV May 21. A very poor and unsatisfactory season.

1884. First migrants February 20th. Early March very cold. Early April normal; latter half very backward. Group I May 2, 3, 4; no Group II wave; Groups III, IV May 18.

1885. Very late spring throughout March and April. No Group I wave in May; Group II May 10; Groups III, IV May 18.

1886. Spring starts late. April a trifle backward. Group I May 5, 6; Group II May 9; balance of month and first half of June abnormally cold; small wave on May 21; the Blackpoll Warbler present around the house throughout June, until July 5. An even later spring than the famous one of 1907.

1887. On the whole a very uneventful spring. The first migrants arrived February 20th. April a little backward. Group I May 4; Group II May 8; Group III May 12; Group IV May 20.

1888. The first signs of spring came early, but were nipped in the bud by the great blizzard of March 12th and 13th. Though it warmed up quite rapidly from March 17th on, it took the birds some time to recover. The migration was very straggling until the end of the month. The Phoebe did not arrive until March 31st, and on April 1st, Mr. Bicknell notes that Robins were just beginning to become common. April was about normal. Group I May 6; Groups II, III May 12; Groups III, IV May 20.

After 1888 Mr. Bicknell's notes became increasingly fragmentary, and he gave more and more attention to botany, so that it is not possible to gain a complete picture of the spring migration. Both in 1890 and 1891 the first migrants arrived the end of February; and in 1893 many of the first lot of May species arrived on April 29th and 30th.

We thus see that the earliest migrants arrived in February in five out of sixteen years, as against only twice in the last seventeen. A marked late April wave bringing early May migrants occurred five times in nineteen years, though four of these years were in succession. This same phenomenon has occurred only three times in the past nineteen years, namely in 1914, 1923 and 1925. I stress these two points, as they afford biological evidence in addition to the records of the Weather Bureau, to refute the very general impression that in

the "good old days" our climate was far more severe than now. As bearing on the same question, we should also examine the evidence Mr. Bicknell obtained in winter and late fall. The lowest temperature he records during this period is -3° . While it would seem as if he obtained fewer winter records for non-winter residents than we get today, we must not forget that he was working alone and single-handed, and that the far greater number of records of unusual lingerers in recent years represents the combined results of scores of active field workers over a far larger area. Even if the point be made that one active observer in the Bronx Region gets more such unusual records in any one year than Mr. Bicknell did in his time, he is indebted to others for many of them and is even directed to the exact spot, or at least he has the enormous advantage of often going afield with a party, and several pairs of eyes and ears are just that much better than one. Mr. Bicknell had no such companionship, and in twenty years of bird-hunting, no one ever showed him an unusual visitor. There is no reliable evidence, therefore, that the winters were harder, or that the birds departed earlier in the fall then than now. I give herewith a table for the spring arrival of common species, representing the smaller groups outlined in my Handbook in the chapter on migration. A blank in any year indicates that Mr. Bicknell undoubtedly overlooked the actual arrival.

I give below a systematic list of all the species, concerning which Mr. Bicknell made observations of interest. Special attention is paid to those the status of which has materially altered today. Unusual records and occurrences are included, and all data are given in full which in any way extend the current local knowledge.

Lophodytes cucullatus. Hooded Merganser.—Recorded only once, November 21, 1880.

Anas rubripes. Black Duck.—Mr. Bicknell's observations covered a period long before the present-day conditions, where feral birds occur in his territory throughout the year. This species was formerly a common transient on all the smallest ponds and swamps, and wintered in January and February, 1878.

Querquedula discors. Blue-winged Teal.—Van Cortlandt Park Lake was a favored duck-shooting locality fifty years ago. Mr. Bicknell notes that a local hunter shot 6 of this species on September 15, 1880.

Aix sponsa. Wood Duck.—A common summer resident. A crippled female caught alive January 4, 1879.

Harelda hyemalis. Old-squaw.—Recorded on the Hudson River, October 12, 1873; 1 shot November 30, 1877; flock seen December 26, 1879.

Branta c. canadensis. Canada Goose.—Seen flying over every spring and fall,

one record of a flock alighting in the Kingsbridge Meadows; flock of twenty seen January 2, 1893, sitting on the ice-covered Hudson River.

Botaurus lentiginosus. Bittern.—Bred in Van Cortlandt Swamp up to 1879.

Butorides virescens. Green Heron.—A common summer resident in many small swamps now drained; only twice recorded in October.

Nycticorax nycticorax năvius. Black-crowned Night Heron.—The large resident colonies of this species are a relatively modern phenomenon. In Mr. Bicknell's day a common spring transient, less common in fall; also occasionally noted all summer, but no nesting colony ever found; April 10, 1879 to October 8, 1880.

Rallus c. crepitans. Clapper Rail.—Nested up to 1893 in the Harlem River marshes at junction point of Sherman Creek. On May 4, 1878, a male was discovered strolling on the wharf at Riverdale, and was collected with a charge of small stones.

Rallus virginianus. Virginia Rail.—Formerly a common and generally distributed summer resident.

Porzana carolina. Sora.—Never recorded in spring or summer; a common fall transient, August 21, 1881 to October 17, 1880.

Coturnicops noveboracensis. Yellow Rail.—One shot near Dyckman Street September 29, 1880; one found dead on Broadway October 2, 1881.

Fulica americana. Coot.—Regular fall transient up to 1880, after that only occasional; only twice in spring; noted November 30, 1879 and December 1, 1878; also April 28, 1880.

Philohela minor. Woodcock.—At first a common summer resident, not nesting at Riverdale after 1886; noted as late as December 2, 1880.

Gallinago delicata. Wilson's Snipe.—It is rather surprising that Mr. Bicknell found this species far commoner in spring than in fall.

Pisobia minutilla. Least Sandpiper.—Regular transient in the early eighties along the Harlem River marshes.

Catoptrophorus semipalmatus. Willet.—Casual in Mr. Bicknell's territory; one shot September 7, 1880.

Actitis macularia. Spotted Sandpiper.—Formerly a common summer resident, now surviving in a few scattered places only; transients regularly arrived in late July; noted as early as April 22, 1874.

Oxyechus vociferus. Killdeer.—Only one record, March 27, 1888, a flock of three birds; a surprising paucity of records.

Colinus v. virginianus. Bob-white.—Common permanent resident at Riverdale, now extirpated.

Ectopistes migratorius. Passenger Pigeon.—Only one spring record, March 30, 1875; regular in fall throughout the seventies, the records as follows: 1872, October 20; 1873, one seen October 25; 1874, flock of 13 on October 11; 1875, September 11; 1876, flock of 15 September 2, one September 3, "one shot October 17, the last one seen" [implying that others were seen between these dates.—L. G.]; 1877, "Two seen on August 30 were the only ones noted till October 6, when a flock of about 30 were seen bearing down from the N. W. before a brisk, cold wind;" 1878, "None noticed in the spring. A flock of 4, reported on trustworthy authority as having been seen September 6, were the first of the fall migration noted. A flock of about 8 September 13. A small flock September 14, about nine September

15, and a flock of 20 same day. Do. of about 30 flying S. W. on morning of 16th. A flock of 8 or 10 started from ground in dry woods September 18. Two flocks of about 10 on 19th, 4 on 20th; a few single birds and a flock of about 15 on 22nd. The same day in early morning I found it almost impossible without the use of missiles to frighten a single bird from its perch but a few yards above me. One on 23rd and 26th. A flock of 4 or 5 on October 15th were the first noticed in some time and the last ones seen. These birds seemed to be more abundant this fall than for some years previously." 1879, two reported on September 21. 1880, 3 seen September 5; one shot September 11; flock of 25-30 September 19; one October 3; 2 October 9. 1881, flock of 3 reported on September 8; 2 reported September 30.

Zenaidura macroura carolinensis. Mourning Dove.—Common summer resident throughout, now extirpated in most of the territory; never recorded between November 25 and March 18.

Cathartes aura septentrionalis. Turkey Vulture.—One record, June 19, 1895.

Accipiter cooperi. Cooper's Hawk.—Bred in woods southeast of Yonkers in 1883; one mid-winter record.

Astur a. atricapillus. Goshawk.—Only one record, January 12, 1879.

Buteo b. borealis. Red-tailed Hawk.—Arrived as early as August 22, 1880.

Buteo l. lineatus. Red-shouldered Hawk.—A common breeder at Riverdale, now locally extirpated.

Buteo platypterus. Broad-winged Hawk.—Great flight observed on September 16, 1878.

Haliaeetus l. leucocephalus. Bald Eagle.—Always a common winter visitant; occasionally seen in mid-summer up to 1888.

Falco c. columbarius. Pigeon Hawk.—Mr. Bicknell obtained only one spring and four fall records for this species.

Strix v. varia. Barred Owl.—Resident in the woods on Riverdale Ridge; long since extirpated.

Otus a. asio. Screech Owl.—A common permanent resident. This Owl still survives at Riverdale and Van Cortlandt Park.

Bubo v. virginianus. Great Horned Owl.—Bred back of Mt. Vernon in 1879. One flushed in the Delafield woods (now Fieldston) December 30, 1891.

Coccyzus erythrophthalmus. Black-billed Cuckoo.—Formerly a common summer resident at Riverdale. The Yellow-billed Cuckoo still survives there, but this species has disappeared.

Ceryle alcyon. Kingfisher.—A common summer resident at Riverdale in Mr. Bicknell's day, frequently remaining through December or even wintering along Spuyten Duyvil Creek.

Dryobates v. villosus. Hairy Woodpecker.—No longer surviving in most of Mr. Bicknell's territory.

Sphyrapicus v. varius. Yellow-bellied Sapsucker.—Numerous winter records in Mr. Bicknell's time, as compared with two only in recent years.

Colaptes auratus luteus. Flicker.—Regularly in winter at Riverdale; now a summer resident only.

Antrostomus v. vociferus. Whip-poor-will.—Bred at Riverdale in the 70's; a

regular transient in spring up to 1885; only three fall records obtained, one on October 18, 1876.

Chordeiles v. virginianus. Nighthawk.—Never bred in Mr. Bicknell's time, occurring only as a migrant, uncommon in spring, common to abundant in fall; May 8, 1895 to June 5, 1879; August 20, 1881 to October 10, 1880. One of the few species which has become adapted to metropolitan and suburban life in comparatively recent years.

Archilochus colubris. Ruby-throated Hummingbird.—A common summer resident, now extirpated in most of Mr. Bicknell's territory; April 30, 1872 and May 2, 1882 to October 1, 1874.

Tyrannus tyrannus. Kingbird.—No longer breeding at Riverdale.

Tyrannus verticalis. Arkansas Kingbird.—One collected October 19, 1875.

Myiarchus crinitus. Crested Flycatcher.—Arrived April 26, 1872 and April 29, 1881.

Sayornis phæbe. Phæbe.—Formerly a common summer resident at Riverdale, now extirpated; arrived March 5, 1880, and March 10, 1879, dates never since equalled or approached; noted as late as November 26, 1874, but never recorded in winter.

Nuttallornis borealis. Olive-sided Flycatcher.—Never recorded in spring and only six times in fall.

Myiochanes virens. Wood Pewee.—Arrived on the very early dates of May 3, 1872 and May 4, 1874; one collected October 6, 1881.

Empidonax flaviventris. Yellow-bellied Flycatcher.—Earliest fall arrival August 11, 1881; one collected October 6, 1881.

Empidonax virescens. Acadian Flycatcher.—A common summer resident, now extirpated throughout Mr. Bicknell's regular territory; as illustrating the normally very early departure southward of this species, Mr. Bicknell obtained only two definite records of this species in August.

Empidonax trailli alnorum. Alder Flycatcher.—Found undoubtedly breeding in four different swamps near the Jerome Reservoir in 1888 and 1893; regarded as a regular spring transient at Riverdale, May 17, 1896 to June 15, 1876 and 1879.

Empidonax minimus. Least Flycatcher.—Common summer resident, now almost entirely extirpated throughout the territory; frequently arriving the last days of April, and as early as April 21, 1880 and April 26, 1874; one shot on October 4, 1881.

Corvus ossifragus. Fish Crow.—Mr. Bicknell's observations tally very interestingly with those of modern observers, who are surprised at the very early departure of this species in localities where it does not winter; recorded as arriving at Riverdale as early as February 22, 1881; but never observed later than August 15, 1880.

Sturnus vulgaris. Starling.—First noted May 9, 1891, and next on October 16, 1893.

Dolichonyx oryzivorus. Bobolink.—A common summer resident in the fields south of Van Cortlandt Park and around the site of the Jerome Reservoir; elsewhere an abundant transient, moving southward as early as June 27, 1880, and regularly the first week in July; noted as late as October 12, 1879.

Molothrus a. ater. Cowbird.—Formerly common, now absent as a summer resident at Riverdale; pair noted on February 21, 1885.

Agelaius p. phæniceus. Red-winged Blackbird.—Formerly common, no longer surviving as a summer resident at Riverdale.

Sturnella m. magna. Meadowlark.—Status changed exactly as with the last species.

Icterus spurius. Orchard Oriole.—A common summer resident at Riverdale, now extirpated; usually arriving about a day later than the Baltimore Oriole, but in three years out of twenty-five, arriving first; remarkably early arrivals are April 30, 1890, May 2, 1878, and May 2, 1884; noted also as late as August 28, 1881.

Euphagus carolinus. Rusty Blackbird.—Mr. Bicknell recorded this species as arriving in late September five years out of eighteen, an average which has not been maintained in recent years; his earliest dates are September 18, 1881, and September 23, 1877; on the other hand he obtained only one mid-winter record.

Quiscalus quiscula quiscula. Purple Grackle.—Earliest spring arrival February 15, 1880; several nesting colonies at Riverdale, now extirpated. Mr. Bicknell never detected the Bronzed Grackle, but several late December and early January records probably belong to *æneus*.

Pinicola enucleator leucura. Pine Grosbeak.—Recorded in five winters out of nineteen; November 7, 1871; January 29 to April 1, 1875; December 25, 1882 to February 10, 1883; abundant from January 24 to March 24, 1884; January 18, 1890.

Passer domesticus. House Sparrow.—First seen April 11, 1879.

Carpodacus p. purpureus. Purple Finch.—It is of special interest that Mr. Bicknell found this species nesting definitely in 1876 and 1881; it was abundant during the winter of 1877-78.

Loxia curvirostra minor. American Crossbill.—Abundant from November 3, 1874 to May 10, 1875, the nest and eggs found at Riverdale on April 22; May 5 and 6, 1877; June 13, 15 and July 20, 1878; April 1 to May 18, 1884; November 8, 1887; January 28, 1888; January 12 to April 24, 1890; April 22, 1894. These records show very graphically the erratic behavior of this species.

Loxia leucoptera. White-winged Crossbill.—Recorded only one year, abundant from November 3, 1874 to May 10, 1875.

Acanthis linaria linaria. Redpoll.—Recorded far less often by Mr. Bicknell than in the last twenty years; abundant from January 27 to May 4, 1875; abundant from November 13, 1878 to March 9, 1879; February 17, 1882. The record of November 9, 1878, in my Handbook proves to have been made by William Church Osborn at Garrison.

Carduelis carduelis. European Goldfinch.—Recorded May 12 to 24, 1901 and January 1, 1902.

Spinus pinus. Pine Siskin.—Found wintering in only two years, but noted in spring as late as May 15, 1883 and June 10, 1893.

Plectrophenax n. nivalis. Snow Bunting.—Very irregular at Riverdale, never recorded except after heavy snow-storms in mid-winter; common from January 31 to March 14, 1875; flock of 20 on January 16, 1877; February 8-13, 1882. Dr. A. K. Fisher saw a flock of 200 near Yonkers January 24, 1881.

Poæcetes g. gramineus. Vesper Sparrow.—Found nesting at one locality two miles from the Hudson River and southeast of Van Cortlandt.

Passerculus sandwichensis savanna. Savannah Sparrow.—It is interesting to find that the best locality for this species known to Mr. Bicknell was the "Kingsbridge Meadows."

Ammodramus savannarum australis. Grasshopper Sparrow.—Numerous nesting colonies in Mr. Bicknell's time, long since extirpated.

Passerherbulus h. henslowi. Henslow's Sparrow.—Mr. Bicknell obtained three migration records of this species in early October.

Passerherbulus caudacutus. Sharp-tailed Sparrow.—Nested in the "Kingsbridge Meadows" up to 1882.

Passerherbulus m. maritimus. Seaside Sparrow.—Nested in the Harlem River Marshes at least as late as 1881.

Zonotrichia l. leucophrys. White-crowned Sparrow.—Only three spring records between 1876 and 1884, one of them a flock of 6 on April 28, 1880.

Spizella m. monticola. Tree Sparrow.—Observed as late as April 29, 1875.

Melospiza l. lincolni. Lincoln's Sparrow.—Only once in fall, and never in spring at Riverdale.

Melospiza georgiana. Swamp Sparrow.—Common summer resident in all swamps from Riverdale south to Kingsbridge and Dyckman Street, now extirpated; one wintered at Riverdale, 1875-76.

Passerella i. iliaca. Fox Sparrow.—Recorded on the very early date of October 1, 1880, and as late as April 25, 1875.

Cardinalis c. cardinalis. Cardinal.—Frequently recorded at Riverdale between 1872 and 1894, nesting in 1889, 1890 and 1894; several birds wintered in various years.

Zamelodia ludoviciana. Rose-breasted Grosbeak.—A very interesting change in the status of this species took place in Mr. Bicknell's time. It was an uncommon transient from 1872 on and was missed entirely in 1878; a pair was found nesting in 1879, and it became a common summer resident after 1882.

Piranga erythromelas. Scarlet Tanager.—Arrival April 29, 1881 and May 3, 1878; noted on October 20, 1876.

Progne subis. Purple Martin.—A rare transient at Riverdale, recorded six times in spring in 17 years, and four times in fall; April 22, 1893 to May 21, 1885; June 23, 1888, July 17, 1885 to August 28, 1880.

Petrochelidon l. lunifrons. Cliff Swallow.—One or two pairs bred at Riverdale until 1881, also found nesting at Mt. Vernon in 1879; up to 1886 a common transient, after that rapidly decreasing; regularly moving southward in July, as early as July 2, 1883.

Hirundo erythrogaster. Barn Swallow.—Formerly common, now extirpated as a summer resident at Riverdale.

Riparia riparia. Bank Swallow.—Casual as late as October 11, 1891.

Stelgidopteryx serripennis. Rough-winged Swallow.—Formerly a common summer resident at Riverdale, now extirpated.

Bombycilla cedrorum. Cedar Waxwing.—A regular summer resident at Riverdale, now extirpated. Some of the vagaries of this species in Mr. Bicknell's time are worth putting on record; thus in 1877 it arrived to stay on April 13:

southward movement began as early as August 2, 1878; two on February 14, 1878, the only winter record; arrived in numbers on March 3, 1878, and remained abundant until June.

Lanius borealis. Northern Shrike.—Recorded in four out of five winters on the average, arriving October 30, 1881, and October 31, 1875.

Lanius ludovicianus migrans. Migrant Shrike.—Only one fall record obtained.

Vireosylva olivacea. Red-eyed Vireo.—Recorded in the first ten days of May, five out of twenty-five years; May 3, 1878, May 4, 1880, May 9, 1881, May 8, 1887, May 6, 1891; May 5, 1896; also as late as October 24 1880.

Vireosylva philadelphia. Philadelphia Vireo.—One found dead September 17, 1885.

Vireosylva g. gilva. Warbling Vireo.—Common summer resident at Riverdale, now extirpated; May 2, 1878 to September 18, 1881.

Lanivireo flavifrons. Yellow-throated Vireo.—Common in Mr. Bicknell's day, now locally extirpated; its return is a possibility, however, as it is now increasing in other parts of the Bronx region; arrived in April five years out of twenty, earliest April 26, 1879.

Lanivireo s. solitarius. Solitary Vireo.—Regarded as rare in spring by Mr. Bicknell; noted September 9, 1877 and October 27, 1876.

Vireo g. griseus. White-eyed Vireo.—Common summer resident at Riverdale, now extirpated; arrived three times in late April in 22 years, a record not duplicated in any part of the New York Region since; April 29, 1880.

Mniotilta varia. Black and White Warbler.—Arrived April 18, 1880; now extirpated at Riverdale.

Helmitheros vermivorus. Worm-eating Warbler.—Formerly a common summer resident at Riverdale, now a rare transient there.

Protonotaria citrea. Prothonotary Warbler.—One record, June 2, 1895.

Vermivora pinus. Blue-winged Warbler.—Four April arrivals in twenty years.

Vermivora chrysoptera. Golden-winged Warbler.—Much rarer formerly than now; only one record, August 11, 1881.

Vermivora r. rubricapilla. Nashville Warbler.—A decidedly uncommon transient in Mr. Bicknell's day, sometimes unrecorded an entire spring or fall.

Vermivora c. celata. Orange-crowned Warbler.—October 9 and 29, 1876.

Vermivora peregrina. Tennessee Warbler.—A very rare bird in Mr. Bicknell's day; May 22, 1876, May 17, 1877; August 16 to October 10, 1880; May 28, 1896.

Compsothlypis americana usneæ. Parula Warbler.—Recorded April 26, 1878, June 8, 1879, and October 26, 1879.

Dendroica tigrina. Cape May Warbler.—A very rare bird in Mr. Bicknell's day; October 5, 1879; August 22 to September 12, 1880; several on May 13, 1900.

Dendroica æ. æstiva. Yellow Warbler.—Formerly a common summer resident at Riverdale, now extirpated.

Dendroica c. cærulescens. Black-throated Blue Warbler.—Noted in the spring as late as May 28, 1882; only twice recorded as arriving in August; a very late fall date is October 29, 1876.

Dendroica magnolia. Magnolia Warbler.—Latest fall date October 19, 1876.

Dendroica pensylvanica. Chestnut-sided Warbler.—Never bred in Mr. Bicknell's time, known only as a common transient; it remained in the spring up to May 28, 1882, and the earliest fall arrival was August 11, 1881.

Dendroica castanea. Bay-breasted Warbler.—A rare transient in Mr. Bicknell's day, recorded in only six springs out of eleven, and by no means every fall; casual on July 26, 1875; one collected on the remarkable date October 13, 1876.

Dendroica striata. Blackpoll Warbler.—Arrived May 3, 1878, and became common on the 6th; also May 5, 1880; remained until July 5th in the remarkably cold spring of 1886.

Dendroica fusca. Blackburnian Warbler.—It is interesting to find that in Mr. Bicknell's day this species was almost as rare as the Bay-breasted Warbler in spring, and was by no means recorded every season.

Dendroica vigorsii. Pine Warbler.—A very rare transient, its status obviously quite different from the present time; several records between April 3 and June 5, 1875; on October 5, 1879; April 12, 1890, and a pair probably bred, as the species was recorded until July 3; April 14, 1891.

Dendroica palmarum palmarum. Palm Warbler.—It is desirable to stress the point that Mr. Bicknell never recorded this subspecies. This negative evidence endorses my belief that it has increased in this region in the past thirty or forty years.

Dendroica discolor. Prairie Warbler.—A rare transient in Mr. Bicknell's time, only four years in spring and once in fall.

Seiurus aurocapillus. Ovenbird.—No longer nesting at Riverdale where it was formerly abundant; arrived in April eight years out of twenty-two.

Seiurus motacilla. Louisiana Water-Thrush.—A pair bred regularly in Riverdale Glen in Mr. Bicknell's time; long since locally extirpated.

Oporornis formosus. Kentucky Warbler.—An uncommon summer resident in various woods north of Van Cortlandt Park. It lingered in the woods near the Yonkers Reservoir until 1898.

Oporornis philadelphia. Mourning Warbler.—Very rare transient; the records are May 22 and 23, 1875; May 28, 1876; June 3, 1878; September 3, 1881.

Geothlypis t. trichas. Maryland Yellow-throat.—Now extirpated as a summer resident at Riverdale, but formerly common; recorded October 24, 1875.

Icteria v. virens. Yellow-breasted Chat.—A very common summer resident, now extirpated at Riverdale. It is interesting to observe that Mr. Bicknell's arrival dates average earlier than those obtained in more recent years. The Chat usually arrived before May 8, and the earliest dates were April 26, 1872, May 2, 1881 and May 3, 1880; noted in the fall as late as September 21, 1873.

Wilsonia citrina. Hooded Warbler. Common summer resident at Riverdale and Van Cortlandt Park up to 1893 at least.

Wilsonia p. pusilla. Wilson's Warbler.—A rare transient in Mr. Bicknell's time, unrecorded in spring for five years at a stretch; recorded August 13, 1881, and casual on November 22, 1885.

Setophaga ruticilla. Redstart.—Formerly abundant, now probably extirpated as a summer resident at Riverdale; arrived in late April seven years out of twenty-one.

Anthus rubescens. Pipit.—Only once recorded in spring by Mr. Bicknell.

Mimus p. polyglottos. Mockingbird.—Recorded October 28 to November 21, 1877; October 29 to November 9, 1878; October 9, 1880; July 23, 1884.

Dumetella carolinensis. Catbird.—Recorded as early as April 25, 1878; several November records up to November 30, 1884; a single bird remained through the winter of 1885-86, and 1889-90.

Toxostoma rufum. Brown Thrasher.—Recorded January 10 and February 15, 1880, and February 10, 1897.

Thryothorus l. ludovicianus. Carolina Wren.—Recorded ten years out of fifteen, every month in the year, nesting in 1879, 1881, and 1888; non-breeding birds chiefly in March and April, September to November; only one mid-winter record.

Cistothorus stellaris. Short-billed Marsh Wren.—A rare fall transient, chiefly in the Kingsbridge Meadows; found only in 1876, 1880, 1881, and 1895; the extreme dates are August 12, 1881 to October 23, 1880.

Telmatodytes p. palustris. Long-billed Marsh Wren.—Common in many cattail marshes from the Harlem River and Kingsbridge northward, now destroyed; arrived before May 9 in only three years out of twenty-one.

Sitta canadensis. Red-breasted Nuthatch.—Some of the vagaries of this erratic species in Mr. Bicknell's time are worth recording; in the first place it is rather surprising that he recorded it only twice in spring; in 1878 it arrived from the north on the astonishing date of July 10 and was abundant by August 12; this performance was repeated in 1889, when it arrived on July 18 and was next seen on August 8; a bird seen July 1-5, 1886, is impossible to allocate definitely, as it was not recorded either that spring or the ensuing fall.

Bæolophus bicolor. Tufted Titmouse.—One bird from November 29, 1874 to March 28, 1875.

Regulus s. satrapa. Golden-crowned Kinglet.—Recorded on the remarkable date of September 10, 1898.

Regulus c. calendula. Ruby-crowned Kinglet.—Recorded January 18, 1885.

Hylocichla mustelina. Wood Thrush.—Arrived April 23, 1896 and April 24, 1879; in only seven years out of twenty-five unrecorded in April; lingered until October 27, 1883, and casually to November 12, 1888, in the latter case a bird found about the house from October 26 on.

Hylocichla aliciae aliciae. Gray-cheeked Thrush.—Extreme spring dates are May 5, 1887 to June 6, 1886.

Hylocichla aliciae bicknelli. Bicknell's Thrush.—Specimens collected May 24, 1877, May 16, 1883 and September 20, 1881.

A Detailed Report on the Bird Life of the Greater Bronx Region

BY JOHN F. KUERZI

The term Bronx Region may be conveniently applied to the area in and about the Bronx watershed. It includes the borough of the Bronx, and extends north to the upper reaches of the Bronx, Sawmill and Grassy Sprain Rivers; or approximately north to a parabola connecting Tarrytown, Kensico, and Rye. It thus embraces all the river valleys draining south or nearly south, into the upper limits of the Bronx, and is the natural migratory basin of the Bronx Region. Others have thought it expedient to limit the Bronx Region to the comparatively small area south of Yonkers and Pelham, and while this plan obviously has the advantage of being a smaller area, it also has its evident drawbacks. To begin with, there is no natural demarcation or barrier whatsoever, to warrant the drawing of such a line, as anyone who has been over the region will testify. The country is the same as far north as Kensico, and consequently the bird-life is very nearly identical. Practically no active local observers would think of limiting themselves to the smaller area, and as a result, such observers have been consistently going further north. Ample data on the birds of this larger area are now available, which when properly arranged, greatly add to our knowledge of local birds. There appears to be no adequate reason for disregarding the observations made beyond a certain, more or less imaginary line, and for this reason it has seemed expedient to extend the area so as to include the whole Bronx watershed south of Kensico, about which the region very naturally centers.

Geographically the region is not particularly complicated. On the east is open country, composed of rolling uplands, and the tide-water marshes and inlets of Long Island Sound. It is here that the majority of the water-birds have been recorded, and certain species, typical of such a habitat, breed. Through the center extends the Bronx River Valley, in the low, rich woodlands, and swamps of which most of the land-birds have been observed, and many of them remain to nest. West of the valley, the land rises, becomes drier and hillier, until it comes to a somewhat abrupt termination at the Hudson river,—still a highway of migration for some Shorebirds and Ducks, though at present mainly for land-birds.

Fifty years ago, when observations began locally, practically all of this area was rural country. There was very little change of a

general nature until perhaps twenty years ago, until which time such wild and retiring species as the Great Horned Owl bred locally. Since then most of the country has undergone a radical change, owing to rapid urban development, so that now a considerable portion of it is unfit for birds, and almost all of the remaining country is of a decidedly suburban, rather than rural character. This, of course, had its direct effect upon the local bird-life, and as a result some species, notably certain of the water-birds, have decreased locally to a marked extent. However, to partially offset this, others have unquestionably increased, and some to an appreciable degree during this same period.

The bird-life of this area is still varied and surprisingly abundant, probably owing, at least in part, to the diversity of favorable environment. Perhaps a more fundamental explanation may be found in the fact that the region is touched by at least two different life zones. While its bird-life is chiefly characteristic of the Transition Zone, there is strong evidence of at least a trace of the Carolinian Zone, if the presence of certain species in the breeding season, as well as at other times, may be taken as an indication of this. Thus, four species generally regarded as Carolinian, are permanent residents, and at least six others are common, and several others fairly so, during the breeding season. Curiously, others typical of this life zone have decreased locally, or disappeared altogether from the region, in recent years, for which there is no apparent reason.

Despite the changing local conditions, approximately ninety-five species of birds breed annually, and in exceptionally favorable years, over one hundred species have bred. Migrants are obviously concentrated over the remaining favorable localities, and as many as one hundred and thirty-six species have been recently recorded by two parties of two observers each, on a May day census. The total list is two hundred and seventy-four species.

Although observations locally began fifty or more years ago, no really consistent work has been done in the region, barring the observations of the late Mr. E. P. Bicknell at Riverdale many years ago, until comparatively recently when the present generation of observers commenced activities afield. It is regrettable that Mr. Bicknell's observations in the region were limited almost exclusively to the Riverdale section, for had they been of a somewhat more extended nature, they would doubtless have formed the basis of a more interesting comparison between the bird-life of his time and that of ours. His field experience at Riverdale, and details of that section's bird-life in

the past are presented by Mr. Griscom in another article in this Abstract. Duplication of records has been avoided as much as possible.

Perhaps no account of the Bronx Region is complete without special mention of the Botanical Garden, which has been for years the local center of the growth of ornithological interest. It is undoubtedly the best place in the region in which to observe the interesting recurring phenomenon of migration, and its rich woodlands annually yield an abundance of arboreal birds. Whereas formerly there were a mere handful at all regular in their visits to the Garden, the number of enthusiasts is steadily growing. Comparatively few years ago, it was possible to spend hours afield here in the early morning, never meeting another observer, but at the present time one is almost certain to meet a few observers at almost any time, and during migrations there are frequently dozens about. It is here, if anywhere, that observers foregather to discuss and exchange local field-notes.

Before concluding, I cannot forbear thanking those who have been of assistance to, or who have co-operated with me in any way. I am particularly indebted to the various members of the Bronx County Bird Club for placing their records and experience entirely at my disposal and to Mr. Ludlow Griscom who edited the manuscript, incorporating a number of his own and Mr. Bicknell's records. To others also, who have aided me in various ways, I wish here to make grateful acknowledgment.

ANNOTATED LIST OF BIRDS OF THE BRONX REGION

Colymbus holbælli. Holboell's Grebe.—Irregular and uncommon transient and winter visitant, occasionally fairly numerous in late winter and early spring; chiefly on the Sound, but of rare occurrence on the reservoirs and rivers. October 15, 1910 (Hix, Wiegmann) to April 28, 1923 (Kuerzi).

Colymbus auritus. Horned Grebe.—Common transient and fairly common in winter on the Sound; of regular occurrence on the reservoirs and rivers. October 6, 1921 (Coles) to May 23, 1926 (Coles). Casual in summer.

Podilymbus podiceps. Pied-billed Grebe.—Formerly bred; now a fairly common transient, chiefly in fall. March 18, 1927 (Kuerzi) to May 3, 1924 (Cruickshank); August 18 to November 22, 1925 (Coles).

Gavia immer. Loon.—Regular and fairly common transient and winter visitant. August 16, 1922 (Coles) to May 25, 1924 (Kuerzi) and June 2, 1923 (Herbert, Hickey).

Gavia stellata. Red-throated Loon.—Uncommon though rather regular fall transient on the Sound; unknown elsewhere. October 11, 1926 (Kuerzi) to February 22, 1927 (Herbert, Kassoy, Kuerzi).

Uria lomvia. Brunnich's Murre.—One record; specimen taken off Fort Schuyler, December 23, 1926 (W. Singer), presented to American Museum of Natural History.

Larus hyperboreus. Glaucous Gull.—Irregular and decidedly uncommon in winter. October 13, 1919 to April 25, 1926 (Coles).

Larus leucopterus. Iceland Gull.—Of more frequent occurrence than *L. hyperboreus*. November 22, 1923 to April 20, 1923 (Kuerzi) and May 15, 1926 (Cruickshank); casual July 31, 1926 (Kessler, Kuerzi).

Larus marinus. Black-backed Gull.—Regular and fairly common winter visitant on the Sound, uncommon on the Hudson River, and of rare occurrence on the reservoirs. September 15, 1926 (Coles) to April 17, 1923 (Kuerzi).

Larus argentatus. Herring Gull.—Abundant winter resident, a few usually summering on the Sound; migrants arrive in August and September,

Larus delawarensis. Ring-billed Gull.—Fairly common transient, occasionally wintering. July 18, 1921; July 29, 1924 (Kuerzi) to May 15, 1925 and June 2, 1923 (Kuerzi).

Larus atricilla. Laughing Gull.—Presumably no record prior to 1916; at present a fairly common spring, and abundant fall transient, increasing. April 24, 1926 (Kuerzi) to June 20, 1926 (Cruickshank); July 13, 1926 (Kuerzi), normally to the end of November. In 1924 an immature bird lingered until December 5 (Hickey, Kuerzi), and on December 5, 1925 two adults were found in the same locality (Kuerzi).

Larus philadelphia. Bonaparte's Gull.—Fairly common transient, rare in winter. March 5, 9 and 29, and April 14, 1923 (Kuerzi) to June 13, 1926 (Coles); August 17, 1925 (Coles) to December 27, 1925 (Cruickshank); February 9, 1922 (L. N. Nichols).

Sterna hirundo. Common Tern.—Rare spring, fairly common fall transient. May 7, 1923 to June 10, 1926 (Coles); July 9, 1926 (Coles) to October 30, 1922 (Kuerzi).

Hydrochelidon nigra surinamensis. Black Tern.—Uncommon fall transient. July 31, 1926 (Kuerzi) to October 2, 1915, specimen collected (Coles).

Sterna forsteri. Forster's Tern.—Satisfactory observations range from August 17, 1925 to September 23, 1925 (Kuerzi).

Rynchops nigra. Black Skimmer.—Casual; a single individual at short range, off Hunts Point, September 14, 1924 (Kessler, Kuerzi); another along the Sound, off New Rochelle, July 17, 1926 (Mrs. E. Rich).

Oceanites oceanicus. Wilson's Petrel.—Several on the Hudson above Dyckman St., about twelve years ago, in August (Starck).

Sula bassana. Gannet.—Casual, or very rare transient; "October 16, 1915, Hudson River opposite Englewood, New Jersey, a Gannet flying east of midstream, from the Dyckman Street ferry" (J. T. Nichols); another in the same locality off Riverdale, October 31, 1925 (Cruickshank); January 18, 1927, Hudson River (Cruickshank).

Phalacrocorax a. auritus. Double-crested Cormorant.—Rare spring and fall migrant. April 24, 1926 (Kuerzi); May 8, 1926 (Coles) to June 23, 1926 (Cruickshank); August 31, 1923 (Griscom) to October 15, 1924 (Hickey, Kessler, Kuerzi), and November 1, 1923 (Kuerzi); November 7, 1926 (Herbert).

Mergus americanus. American Merganser.—Regular and common winter

visitant. November 1, 1922 (Kuerzi) to April 13, 1925, and sometimes as late as May 13, 1925 (Kuerzi); only 1 record (Bicknell).

Mergus serrator. Red-breasted Merganser.—Fairly common transient and winter visitant, occasionally numerous on salt-water, where it practically replaces the preceding species. October 15, 1924 (Kuerzi) to May 23, 1926 (Coles); casual June 7, 1925 (Herbert, Hickey).

Lophodytes cucullatus. Hooded Merganser.—Rare but somewhat regular transient, and winter resident. October 24, 1925 (Ogburn, Kuerzi) to January 6, 1924 (Herbert); February 20, 1915 (J. M. Johnson) to March 28, 1926 (Cruickshank) and April 6, 1926 (Kuerzi).

Anas platyrhynchos. Mallard.—Uncommon but regular transient on the Hudson River, elsewhere wild birds cannot be satisfactorily differentiated from feral birds which originate from the Zoological Garden, and commonly range about over most of the area. February 7 and 13, 1926 (Cruickshank) to April 25, 1923 (Kuerzi) and May 15, 1926 (Kessler, Kuerzi); September 1, 1922 (Kuerzi) to January 8 and 22, 1925 (Cruickshank); one record November 20, 1876 (Bicknell).

Anas rubripes. Black Duck.—Common, occasionally abundant transient, fairly common in winter; breeding birds may perhaps have been originally feral. August 16, 1922 (Kuerzi) to May 15, 1923 (Kuerzi), and a few through June and July. Wintered in ponds and swamps January-February, 1878; common transient in spring, March 13, 1881 to May 8, 1879.

Mareca penelope. European Widgeon.—A most satisfactory observation of a fine drake and a supposed female, February 9, 1922, on Pelham Bay (L. N. Nichols). ("Handbook Birds of New York City Region," p. 96.)

Mareca americana. Baldpate.—Uncommon spring and fall transient. February 28, 1925 (Kuerzi) to April 21, 1925 (Coles); October 4, 1920 (Kuerzi) to November 30, 1924 (Kuerzi); casual as early as July 30, 1926.

Nettion carolinense. Green-winged Teal.—Uncommon transient. March 20, 1926 (Cruickshank) to April 29, 1920 (Coles); October 15, 1923 to December 12, 1925 (Kuerzi), and December 21, 1924 (G. E. Hix, Charles Johnston); shot at Riverdale April 14, 1866 (Bicknell).

Querquedula discors. Blue-winged Teal.—Rare transient. March 18, 1914 (Wiegmann) to April 26, 1926 (Cruickshank); August 29, 1920 (Kuerzi) to November 14, 1926 (Cruickshank).

Spatula clypeata. Shoveller.—Very rare; a fine drake on the Baychester Marshes March 22, 1920 (L. N. Nichols). ("Handbook Birds of New York City Region," p. 100.)

Dafila acuta. Pintail.—Uncommon transient. February 22, 1925 (Herbert) to April 25, 1926 (Coles); October 24, 1925 to December 30, 1924 (Cruickshank).

Aix sponsa. Wood Duck.—Fairly common transient; decreasing as a summer resident. February 13, 1926 (Cruickshank) and March 3, 1923 (Kuerzi), normally to late November, and as late as December 23, 1924 (Kuerzi). A crippled female caught January 4, 1879 (Bicknell). Migrants are commonly observed in September and October, when occasionally as many as forty or more birds have been observed in a flock.

Marila americana. Redhead.—Rather rare transient and winter visitant. Feb-

ruary 2, 1926 (Cruickshank) to April 4, 1914 (numerous observers); November 1, 1923 (Kuerzi) to December 28, 1924 and January 18, 1925 (Kuerzi).

Marila valisineria. Canvasback.—In recent years a rather regular transient, and common (sometimes abundant) on the Sound and East River; usually most numerous in late winter and early spring. One thousand or more birds have been recently observed off Hunts Point in February, when generally their peak of abundance is reached locally. No longer of regular occurrence on the Jerome Reservoir; occasional on the Hudson River. October 23, 1926 (Kuerzi) to April 11, 1925 (Kessler, Kuerzi).

Marila marila. Scaup Duck.—Common transient and winter visitant, generally abundant in late winter and early spring. The species has been satisfactorily determined on numerous occasions, but there is a bare possibility that the heavy flights of February and March on our tide-water bays are composed at least partially of the next species. October 17, 1924 (Cruickshank) to April 24, 1926 (Kuerzi), and casually to May 23, 1926 (Coles).

Marila affinis. Lesser Scaup.—Uncommon transient; the following records refer definitely to this species. March 3, 1923 (Kuerzi) to April 18, 1926 (Cruickshank), and casually to July 14, 1925 (Cruickshank, Hickey, Herbert, Kassoy); October 18, 1925 (Kuerzi, Kessler) to November 20, 1923 (Kuerzi).

Marila collaris. Ring-necked Duck.—Very rare transient; there are several recent records on the east end of Kensico, known locally as Rye Lake. The following are the definite records: Drake shot by local gunner in late January, 1921, at Hunts Point; another drake very satisfactorily observed in the same locality, January 31, 1925 (Kessler, Kuerzi). The Rye Lake records are as follows: January 11, 1925 (Griscom and Coles); February, 1925; March 6, 1925; April 4, 1926 (Coles); three birds, April 6, 1926 (Kuerzi); March 12 to 27, 1927, six birds (Kuerzi).

Clangula clangula americana. American Golden-eye.—Common winter visitant on the Sound and the East River as far south as Hunts Point; fairly common on the larger reservoirs and rivers. November 1, 1923 (Coles) to April 25, 1923 (Kuerzi), and exceptionally to May 19, 1926 (Coles).

Charitonetta albeola. Bufflehead.—Regular winter visitant, apparently increasing in recent years. October 22, 1922 (Coles) to April 12, 1923 (Kuerzi).

Harelda hyemalis. Old-squaw.—Uncommon but regular winter visitant. October 12, 1879 (Bicknell), and November 3, 1925 (Coles) to April 24, 1926 (Kuerzi), and May 15, 1926 (Cruickshank).

Oidemia americana. American Scoter.—Irregular, occasionally in numbers on the Sound; rare transient on the Hudson. September 2, 1916 to May 18, 1926 (Coles).

Oidemia deglandi. White-winged Scoter.—Common, occasionally abundant, transient and winter visitant on the Sound; occasional on the Hudson, and casual on the reservoirs. Small numbers sometimes linger well into summer (Coles). September 24, 1920 (Coles) to May 15, 1926 (Kessler).

Oidemia perspicillata. Surf Scoter.—Irregular but sometimes occurs in small numbers. November 1, 1916 to May 2, 1925 (Coles).

Erismatura jamaicensis. Ruddy Duck.—Somewhat irregular and uncommon transient, rare in mid-winter. October 24, 1925 (Ogburn, Kuerzi) to January 12

and 27, 1924 (Ord Meyers); February 21, 1915 (L. N. Nichols) to May 15, 1926 (Kessler).

Branta c. canadensis. Canada Goose.—Uncommon transient; infrequently alighting. February 27, 1922 to May 12, 1916; October 5, 1925 to December 28, 1919 (all by Coles); flock of 20 seen January 2, 1893, sitting on the ice in the Hudson River (Bicknell).

Chen hyperboreus nivalis. Snow Goose.—Specimen collected in December, many years ago. More recently a specimen was taken off Portchester, and another was observed several miles to the north (The Auk, July, 1926, p. 363).

Branta bernicla glaucogastra. Brant.—Rare transient. November 14, 1926 (Cruickshank) to January 2, 1926 (Cruickshank, Kessler, Kuerzi); February 2, 1924 (Meyers, Pangburn), and February 22, 1926 (Kessler, Kuerzi) to April 17, 1923 (Coles).

Botaurus lentiginosus. American Bittern.—Formerly bred, at present a fairly common transient. April 5, 1913 (G. K. Noble), and April 10, 1924 (Cruickshank) to May 19, 1923 (Kuerzi); July 27, 1922 (Herbert) to December 24 and 26, Clason Point (Kuerzi).

Ixobrychus exilis. Least Bittern.—Rare transient and summer resident, bred in 1922 near Tarrytown (Coles); still breeds regularly in the Van Cortlandt Park swamp. Transients have been observed at Hunts Point. May 30 and June 2, 1924; May 20, 1926 (Kuerzi) to September 26, 1926 (Kuerzi).

Ardea h. herodias. Great Blue Heron.—Regular and fairly common transient, frequently lingering well into winter. March 24, 1923 (Kuerzi) to June 9, 1923 (Kuerzi); July 3, 1925 (Herbert, Hickey) to December 30, 1926 (Kuerzi). Three birds up to January 24, 1926 (Kessler, Kuerzi); February 28, 1925 (Charles Johnston).

Herodias egretta. American Egret.—Rare summer visitant. July 16, 1916 to October 9, 1916, a maximum of three birds, in a swamp below Van Cortlandt Park; discovered by Mr. S. H. Chubb, and seen by nearly every local observer. The following year a single bird returned, and was present in the same locality, July 19 to August 5 (S. H. Chubb). A single bird on the Baychester Marshes, August 22 to September 14, 1925 (Kassoy, Matuszewski, Kuerzi).

Florida cærulea. Little Blue Heron.—Rare summer visitor. August 1, 1924 (Kassoy, Hickey) and August 16, 1925 (Kuerzi) to September 4, 1925 (Cruickshank).

Butorides v. virescens. Green Heron.—Common transient, and fairly common summer resident. April 13, 1923 (Kuerzi), to October 12, 1911 (Rogers, Wiegmann).

Nycticorax nycticorax naevius. Black-crowned Night Heron.—Common permanent resident. In recent years large numbers have wintered about the lake, in the Zoological Garden. In 1925-1926, over 150 birds wintered in a spruce grove on the west end of Eastchester Bay, and the Zoological Park colony was virtually deserted. No breeding colony of considerable size is believed to exist locally.

Rallus elegans. King Rail.—Rare transient; one winter record. There is no definite evidence of breeding, but may have bred formerly. April 19, 1916 (Coles); April 23 and 26, 1925 (Cruickshank, Kuerzi); September 2, 1920 (Coles) and

February 1, 1926, specimen picked up dead on Hunts Point salt marsh (Kuerzi); also December 26 and 28, 1926 (Cruickshank and Kuerzi).

Rallus c. crepitans. Clapper Rail.—Formerly a summer resident on the marshes about the upper Harlem River (E. P. Bicknell), and until recent years (Cruickshank). No breeding colony is known to exist locally at the present time, and transients are seldom recorded.

Rallus virginianus. Virginia Rail.—Formerly a common summer resident; now restricted to a few remaining favorable localities. April 5, 1925 (Kessler, Kuerzi) to December 19, 1920 (Coles).

Porzana carolina. Sora.—Uncommon spring, common fall transient, a pair or two breeding locally. April 17, 1925 (Cruickshank) to December 26, 1926 (Cruickshank).

Coturnicops noveboracensis. Yellow Rail.—Very rare; two records; September 29, 1880; October 2, 1881 (Bicknell).

Gallinula galeata. Florida Gallinule.—Uncommon transient, decreasing as a summer resident; several pairs still breeding locally. April 16, 1926 (Cruickshank) to October 24, 1922 (Kuerzi).

Fulica americana. American Coot.—Rare transient. October 7, 1905 (Hix, Wiegmann) to November 12, 1923 (Kuerzi) and January 4, 1926 (Coles); April 2, 1919 (Coles) to April 28, 1880 (Bicknell).

Lobipes lobatus. Northern Phalarope.—Rare transient. August 11, 1923 (Kuerzi) and August 26, 1911 (Hix) to October 26, 1925 (Coles).

Steganopus tricolor. Wilson's Phalarope.—One record; a single bird in the gray plumage associating with about twenty Lesser Yellow-legs, September 21, 1924 (Meyers, Kessler, Kuerzi); probably the same individual observed independently, several hours later by Messrs. Cruickshank, Herbert, Hickey, Kassoy. (See Auk Vol. XLII, p. 126.)

Philohela minor. Woodcock.—Formerly a common summer resident; still breeds locally in limited numbers, and fairly common as a transient. February 24, 1925 (Kuerzi) to December 2, 1880 (Bicknell), and casually later.

Gallinago delicata. Wilson's Snipe.—Regular and fairly common spring and fall transient; casual in summer, and occasional in winter. March 8, 1916 (Coles) and March 29, 1925 (Kuerzi) to May 15, 1924 and May 22, 1922 (Kuerzi); September 7, 1916 (Coles) to December 23, 1924 (Kuerzi); December 28, 1924 and January 1, 1925 (Cruickshank, Ruff); January 27 and February 7, 1926 (Cruickshank); February 24, 1880 (E. P. Bicknell). Casual July 27, 1923 (Kuerzi).

Macrorhamphus g. griseus. Dowitcher.—Fairly common fall transient. July 2, 1923 (Herbert) to September 30, 1923 (Kuerzi).

Micropalama himantopus. Stilt Sandpiper.—Irregular, and uncommon fall transient. July 14, 1923 (Herbert) to September 21, 1924 (Kuerzi), and October 5, 1921 (Coles).

Tringa canutus. Knot.—Rather rare transient. May 11, 1919 (Coles) to May 30, 1909 (Griscom); August 2, 1923 (Kuerzi) to September 27, 1924 (Hickey).

Arquatella m. maritima. Purple Sandpiper.—On February 14, 1916, Dr. William H. Weigmann obtained a very satisfactory observation of a single bird of this

species, on the rocks in Pelham Bay. This is the only definite local record for the species.

Pisobia maculata. Pectoral Sandpiper.—Rare spring, fairly common fall transient, where suitable habitat exists. May 2, 1923 (Kuerzi) to May 26, 1906 (Hix, Wiegmann); July 14, 1925 (Cruickshank) to October 25, 1924 (Hickey), and November 7, 1926 (Kassoy, Herbert).

Pisobia fuscicollis. White-rumped Sandpiper.—Rare spring, uncommon fall transient. May 7, 1925 (Herbert, Kassoy) to May 29, 1924 (Coles); July 27, 1923 (Kuerzi) to October 19, 1925 (Herbert).

Pisobia minutilla. Least Sandpiper.—Regular and fairly common spring and fall transient. April 27, 1923 (Kuerzi) to June 16, 1922 (Coles); July 4, 1924 (Hickey) to October 22, 1924, a single bird with three Semipalmated Sandpipers, at short range and in excellent light (Kessler, Kuerzi).

Pelidna alpina sakhalina. Red-backed Sandpiper.—Rare spring, uncommon fall transient. May 15, 1926 (Kessler, Kuerzi) to May 24, 1925 (Kuerzi); September 20, 1925 (Hickey) to November 3, 1925 (Kuerzi).

Ereunetes pusillus. Semipalmated Sandpiper.—Regular, and fairly common spring, abundant fall migrant. May 2, 1916 (Coles) to June 20, 1919 (Coles); July 8, 1925 (Herbert) to October 22, 1924 (Kessler, Kuerzi), and casually as late as November 2, 1923 (Kuerzi).

Ereunetes mauri. Western Sandpiper.—Satisfactory identifications are as follows: July 10 and 18, 1925 (Cruickshank, Matuszewski), and August 25, 1923, three birds (Kassoy, Kuerzi). On each occasion direct comparison with Least and Semipalmated Sandpipers was had, and the birds were observed at leisure at less than seven or eight yards.

Calidris leucophæa. Sanderling.—Uncommon fall transient. July 8, 1925 (Matuszewski) to November 18, 1926 (Kessler, Kuerzi), also May 15, 1917 (L. N. Nichols).

Totanus melanoleucus. Greater Yellow-legs.—Regular and common transient. April 6, 1926 (Hickey) to June 8, 1922 (Herbert); July 4, 1924 (Hickey) to November 22, 1925 (Hickey).

Totanus flavipes. Lesser Yellow-legs.—Rare spring; common, sometimes abundant fall transient. April 22, 1916 (Coles), May 1 and 5, 1925 (Herbert), May 8, 1926 (Cruickshank), May 10, 1925 (Kuerzi), May 19, 1924 (Kessler, Kuerzi), and June 7, 1922 (Coles); in each case direct comparison with *T. melanoleucus* was had; June 27, 1924 (Hickey) to October 20, 1923 and October 22, 1924 (Kessler, Kuerzi); in the last two instances both species were present, affording direct comparison.

Helodromas s. solitarius. Solitary Sandpiper.—Fairly common transient, occasionally numerous in fall. April 24, 1923 (R. S. Williams) to June 6, 1921 (Coles); July 6, 1925 (Hickey) to October 15, 1923 (Kuerzi). Casual at Hunts Point November 6 to 11, 1925 (Kessler, Kuerzi).

Catoptrophorus s. semipalmatus. Willet.—Rare fall transient. August 4, 1924 (L. N. Nichols) to September 12, 1919 (Coles).

Bartramia longicauda. Upland Plover.—Formerly occasionally heard flying over in late July or August. Specimen picked up dead October 3, 1906, at New

Rochelle (Coles); a single bird on the Baychester marshes, September 9, 1925 (Kessler, Kuerzi); August 8, 1924, at Riverdale (Griscom).

Actitis macularia. Spotted Sandpiper.—Common summer resident; April 18, 1925 (Hickey), normally to September 25, 1924 (Kuerzi), and sometimes as late as October 18, 1925 (Kessler, Kuerzi) and October 23, 1926 (Kuerzi); July 16, 1924, Riverdale (Griscom).

Numenius hudsonicus. Hudsonian Curlew.—Rare fall transient, one spring record. July 23, 1925 (Kuerzi) to September 5, 1926 (Kuerzi); May 15, 1926 (Cruickshank).

Squatarola squatarola. Black-bellied Plover.—Rare spring, uncommon but regular fall transient. May 12, 1923 (Coles) to June 6, 1925 (Hickey); August 9, 1922 (Coles) to November 15, 1925 (Cruickshank).

Charadrius d. dominicus. Golden Plover.—Rare fall transient. August 31, 1925 (Cruickshank); two birds September 14, 1924 (Kessler, Kuerzi); September 26, 1925 (Hickey, Kuerzi); October 17, 1925 (Cruickshank); October 25, 1925 (Kassoy).

Oxyechus vociferus. Killdeer.—Fairly common transient; uncommon and local summer resident, breeding regularly at Clason and Hunts Points. Recorded in every month of the year, though usually absent from late December, or early January, until early February when migrants from the south appear to arrive; rare in mid-winter. January 31, 1924 and February 1, 1923 (Kuerzi) to December 28, 1923 and January 7, 1922 (Kuerzi).

Aegialitis semipalmata. Semipalmated Plover.—Regular but uncommon spring; fairly common fall transient. May 3, 1925 (Herbert) to June 14, 1923 (Kuerzi); July 17, 1923 (Kuerzi) to October 17, 1926 (Herbert, Kassoy).

Aegialitis meloda. Piping Plover.—One record, August 18, 1924, at Rye Beach (Coles).

Arenaria interpres morinella. Turnstone.—Two records, May 17, 1922, at Rye Beach (Coles) and August 4, 1924, at Hunts Point (L. N. Nichols).

Colinus v. virginianus. Bob-white.—Still a fairly common permanent resident, in the Pelham section, and in the interior from about Nepperhan north; a pair or two still survive near Van Cortlandt Park.

Bonasa u. umbellus. Ruffed Grouse.—Bred sparingly until comparatively recent years. Observed as recently as January 9, 1924, on the Sprain Ridge, and October 11, 1925, on the Elmsford Ridge (Coles), and it is quite possible that a pair or two still survive somewhere in this neighborhood. December, 1926, near Kensico (Kuerzi).

Phasianus colchicus, or *Phasianus torquatus*. Pheasant.—Increased markedly since its introduction several years ago, and at present common throughout the eastern section, well established in the interior, and met with occasionally almost anywhere in the area.

Ectopistes migratorius. Passenger Pigeon.—Mr. Bicknell had numerous fall records up to 1881, and obtained one spring record at Riverdale.

Zenaidura macroura carolinensis. Mourning Dove.—Fairly common transient, uncommon summer resident, occasional in winter. March 6, 1925 (Hickey) to November 26, 1924 (Kuerzi); February 12, 1926 (Cruickshank) and February 27, 1923 (Coles), perhaps early migrants.

Cathartes aura septentrionalis. Turkey Vulture.—Occasionally noted flying overhead between June and September; reported as seen flying over the Botanical Garden on several occasions (L. S. Crandall). Noted June 4, 1924 (Kuerzi) and July, 1925 (Cruickshank); June 19, 1895 (Bicknell).

Circus hudsonius. Marsh Hawk.—Formerly bred, now a fairly common transient, rare in winter. Migrants arrive in late March and are present until after the middle of May, and in fall from about the middle of August until January.

Accipiter velox. Sharp-shinned Hawk.—Common transient, a pair or two still breeding locally; rare in winter. March 10, 1923 (Kuerzi) to May 30, 1922 (Kuerzi); August 3, 1922 (Kuerzi) to December 28, 1925 (Hickey).

Accipiter cooperi. Cooper's Hawk.—Fairly common transient, rare in winter. March 12, 1922 (Kuerzi) to May 30, 1917 (Janvrin); July 18, 1923; August 13, 1922 (Kuerzi) to January 2, 1923 (Kuerzi).

Astur a. atricapillus. Goshawk.—Very rare winter visitant; for several days in January, 1919, an adult preyed upon the water fowl in the Zoological Garden (L. S. Crandall). Mr. Coles has recorded single individuals on December 29, 1922, near Rye Lake, and January 23, 1926, at New Rochelle. November 20, 1926 (C. Johnston and others) to January 12, 1879 (Bicknell); January 29, 1927 (Kuerzi).

Buteo b. borealis. Red-tailed Hawk.—Common in winter, and occasional throughout the summer as it breeds nearby. August 22, 1880 (Bicknell) to May 23, 1921 (Kuerzi).

Buteo l. lineatus. Red-shouldered Hawk.—Common transient and winter resident; a few pairs breeding locally.

Buteo platypterus. Broad-winged Hawk.—Uncommon transient, sometimes abundant in fall. April 21, 1922 (Kuerzi) to May 23, 1923 (Kuerzi); August 22, 1924 to October 14, 1923 (Kuerzi). There was a marked flight on September 19, 1925, when over one thousand birds were seen overhead (Cruickshank). Noted June 19, 1926, on the Sprain Ridge (Carter), and there is a bare possibility that a pair or two still breed locally.

Archibuteo lagopus sancti-johannis. Rough-legged Hawk.—Uncommon winter visitant. October 11, 1925 (Kessler) to April 4, 1914 (A. Saunders).

Haliaeetus l. leucocephalus. Bald Eagle.—Occasional visitant, chiefly in winter, but apt to occur at almost any season as it nests comparatively nearby. August 21, 1926 (Kuerzi) to May 27, 1923 (Kuerzi).

Falco peregrinus anatum. Duck Hawk.—Fairly common visitor at almost any season.

Falco c. columbarius. Pigeon Hawk.—Uncommon transient. April 18, 1923 (Kuerzi) to May 17, 1923 (Kuerzi); August 26, 1925 (Kuerzi) to October 21, 1923 (Kuerzi).

Falco s. sparverius. Sparrow Hawk.—Common permanent resident; numbers greatly reinforced by migrants in April and October.

Pandion haliaetus carolinensis. Fish Hawk.—Formerly bred; now a very common transient, occasional in summer. March 19, 1923 (Kuerzi) to June 12, 1926 (Coles); August 5, 1922 (Kuerzi) to October 28, 1924 (Kessler), and November 14, 1925 (Coles).

Aluco pratincola. Barn Owl.—Formerly undoubtedly bred; the numerous recent records at all seasons would seem to indicate that it is still a resident locally.

Asio wilsonianus. Long-eared Owl.—Uncommon but regular winter resident. October 11, 1923 (Coles) to April 24, 1923 (Coles).

Asio flammeus. Short-eared Owl.—Fairly common transient and winter resident. August 1, 1923 (Herbert) to April 26, 1923 (Kuerzi).

Strix v. varia. Barred Owl.—Still a fairly common permanent resident.

Cryptoglaux a. acadia. Saw-whet Owl.—Regular, though rather uncommon winter visitant. October 11, 1919 (Coles), and October 27, 1921 (Kuerzi) to March 18, 1927 (Kuerzi), and early April, 1919 (numerous observers).

Otus a. asio. Screech Owl.—Common permanent resident.

Bubo v. virginianus. Great Horned Owl.—Formerly bred; still of fairly frequent occurrence in winter. Wild birds have been shot from time to time at the Zoological Garden, and one was captured alive there in December, 1926. November 20, 1924 (Kessler, Kuerzi) to April 23, 1926 (L. N. Nichols).

Bubo virginianus subarcticus. Arctic Horned Owl.—Accidental visitant from the north. A female was collected in Bronx Park on February 15, 1919, and brought to Mr. Lee S. Crandall, who forwarded it to the American Museum. This is the first record for New York State (Griscom).

Nyctea nyctea. Snowy Owl.—Rare and irregular winter visitant; specimen collected January 12, 1909 (Bertrand M. Hindman); Mr. Coles has recorded single birds on January 2 and 7, 1916. November 4, 1926 (Herbert, Kassoy) and later several specimens were taken. February 18, 1927 and April 5, 1927 (Kuerzi).

Coccyzus a. americanus. Yellow-billed Cuckoo.—Common summer resident. May 3, 1924 (Hickey) to October 18, 1925 (Kessler, Kuerzi).

Coccyzus erythrophthalmus. Black-billed Cuckoo.—Somewhat less numerous than *C. americanus*. May 2, 1916 (Coles) to October 19, 1921 (Kuerzi).

Ceryle alcyon. Kingfisher.—Common transient, and fairly common summer resident. February 24, 1925 (Kuerzi) to December 31, 1922 (Kuerzi); occasional in winter. August 5, 1923, Riverdale (Griscom).

Dryobates v. villosus. Hairy Woodpecker.—Fairly common permanent resident.

Dryobates pubescens medianus. Downy Woodpecker.—Common permanent resident.

Picoides arcticus. Arctic Three-toed Woodpecker.—Very rare winter visitant. Female discovered in the Bronx Botanical Garden, October 14, 1923 (F. Landis), and seen also by Kuerzi. On October 18, 1923, a male was found nearby (Kessler, Kuerzi), and possibly the same individual in exactly the same locality on the morning of October 20, 1923 (Kuerzi). On October 10, 1925, a male was observed at Van Cordlandt Park by A. Cruickshank. A female at Bronx Park December 9, 1925 (Kuerzi), and another in the same locality February 6, 1926 (Kuerzi). (See Bird-lore, March-April, 1926, p. 132.) Also a male near New Rochelle, February 11, 1926 (Coles); male November 14, 1926 (Johnston); January 31, 1927 (Kuerzi). In addition there are two records of the appearance of the species locally prior to 1915.

Sphyrapicus v. varius. Yellow-bellied Sapsucker.—Fairly common spring; common, sometimes abundant fall transient, subject to considerable variation in

numbers from year to year. April 1, 1917 (Granger) to May 20, 1926 (Kessler, Kuerzi); September 14, 1923 (Kuerzi) to November 26, 1921 (Kuerzi); casual December 8, 1925 (Coles); several old winter records at Riverdale (Bicknell); winter of 1919 (numerous observers); January 25, 1924 (Cruickshank); December 13, 1926 to February 13, 1927 (Kuerzi).

Melanerpes erythrocephalus. Red-headed Woodpecker.—Uncommon transient; frequently wintering, and usually breeding locally in some numbers. Transients are generally recorded anywhere from the middle of March to late May, and in the fall from late August until the end of November. Especially common the summer of 1922 and a considerable number spent the winter.

Colaptes auratus luteus. Flicker.—Common summer resident; frequently wintering. February 25, 1920 (Kuerzi) to December 28, 1924 (Kuerzi). There are numerous records in January and February.

Antrostomus v. vociferus. Whip-poor-will.—Formerly a common summer resident, it has decreased markedly in recent years, until at present it is decidedly uncommon both as a transient and summer resident. April 16, 1919 (Coles) and April 21, 1921 (Kuerzi) to October 18, 1876 (Bicknell); August 28, 1925, at Riverdale (Griscom).

Chordeiles v. virginianus. Nighthawk.—Fairly common summer resident; abundant fall migrant. May 1, 1920 (Kuerzi) to October 16, 1915 (E. G. Nichols).

Chætura pelagica. Chimney Swift.—Common summer resident; extreme dates are April 12, 1922 (Starck) and April 14, 1923 (Kuerzi) to October 26, 1922 (Kuerzi).

Archilochus colubris. Ruby-throated Hummingbird.—Common transient and fairly common summer resident. April 30, 1872; May 2, 1882 to October 1, 1874 (Bicknell); specimen picked up dead, but perfectly fresh on October 7, 1924, near New Rochelle (Coles).

Tyrannus tyrannus. Kingbird.—Common summer resident. April 28, 1923 (Kessler, Kuerzi) to late September, and casually to October 14, 1922 (Hix), and October 14, 1923 (Matuszewski, F. Allen).

Tyrannus verticalis. Arkansas Kingbird.—Immature male collected at Riverdale, October 19, 1875 (Bicknell).

Myiarchus crinitus. Crested Flycatcher.—Common summer resident. April 24, 1920 (Starck) and April 30, 1921 (Kuerzi) to October 1, 1916 (Coles).

Sayornis phæbe. Phoebe.—Common summer resident. March 5, 1880 (Bicknell); March 10, 1879 (Bicknell); March 12, 1927 (Kuerzi) to November 26, 1874 (Bicknell); two winter records, January 1, 1919 (L. N. Nichols), and January 4, 1925 (Coles).

Nuttallornis borealis. Olive-sided Flycatcher.—Uncommon but regular spring and fall transient. May 12, 1920 (Kuerzi) to June 11, 1923 (Coles); August 6, 1919 (Coles) to September 24, 1923 (Kuerzi).

Myiochanes virens. Wood Pewee.—Common summer resident. May 3, 1872 (Bicknell); May 4, 1874 (Bicknell); May 4, 1922 (Kuerzi), and May 7, 1916 (Coles) to October 11, 1924 (Coles), and casually to October 28, 1923 (Matuszewski, F. Allen); specimen collected near New Rochelle, on December 13, 1900 (L. M. McCormick).

Empidonax flaviventris. Yellow-bellied Flycatcher.—Uncommon spring, fairly

common fall transient. May 13, 1922 (Kuerzi) to June 8, 1924 (Kuerzi); August 11, 1881 (Bicknell) to September 27, 1923 (Kuerzi); one collected October 6, 1881 (Bicknell).

Empidonax virescens. Acadian Flycatcher.—Formerly a common summer resident; several pairs bred on the Grassy Sprain ridge as recently as 1925. A pair has bred in Butler's Woods, Scarsdale, for many years; observed there as recently as July 2, 1926 (Kessler, Kuerzi). May 13, 1887 (Dwight) to September 19, 1885 (Dwight).

Empidonax trailli alnorum. Alder Flycatcher.—Uncommon and local summer resident. May 15, 1926 (Kessler, Kuerzi) to August 20, 1924, a singing bird (Kuerzi); probable September 17, 1923 (Kuerzi).

Empidonax minimus. Least Flycatcher.—Still a fairly common summer resident. April 21, 1880 (Bicknell), April 25, 1922 (Kuerzi), and April 29, 1923 (Hickey) to September 23, 1922, and October 1, 1922, probable, (Kuerzi). Small flycatchers are frequently common in September, most of which are probably this species. One shot October 4, 1881 (Bicknell).

Otocoris alpestris alpestris. Horned Lark.—Regular and common fall transient, usually less common in winter and as a spring migrant. October 9, 1926 (Kuerzi) to April 13, 1922 (Coles).

Otocoris alpestris praticola. Prairie Horned Lark.—Probably a rare transient. A bird seen on the Van Cortlandt Park parade ground, on July 29, 1916, was in all probability this sub-species. The following sight records made under most satisfactory conditions refer very probably to this sub-species: November 6, 1923 (Kuerzi); November 2, 3 and 7, 1925 (Cruikshank, Kuerzi); three birds March 29, 1923 (Kuerzi); several birds on May 2, 1926, were possibly this sub-species (Kessler, Kuerzi).

Cyanocitta c. cristata. Blue Jay.—Common permanent resident, and abundant transient from the end of September until late October, and again in April and May.

Corvus b. brachyrhynchos. Crow.—Common permanent resident.

Corvus ossifragus. Fish Crow.—Locally a fairly common permanent resident, wintering chiefly about the Sound.

Sturnus vulgaris. Starling.—First noted on May 9, 1891 (Bicknell); at present an abundant, and ever increasing, permanent resident.

Dolichonyx oryzivorus. Bobolink.—Fairly common summer resident, a few still breeding within the City limits; abundant fall transient. April 19, 1909 (L. N. and E. G. Nichols), and April 28, 1925 (Coles) to October 3, 1921 (Coles), and casually to October 20, 1923 (Kuerzi).

Molothrus a. ater. Cowbird.—Common summer resident, rare in mid-winter. March 8, 1924 (Coles) to December 28, 1924 (Cruikshank), and January 3, 1919 (C. L. Lewis); February 6, 1926 (Herbert); a pair February 2, 1885 (Bicknell).

Agelaius p. phæniceus. Red-winged Blackbird.—Common summer resident, uncommon in winter. February 16, 1922 (Kuerzi) to January 1, 1925, flock of about twelve and undoubtedly late migrants (Kuerzi).

Sturnella m. magna. Meadowlark.—Common permanent resident, numbers are greatly increased during migrations, and there is an appreciable decrease in winter.

Icterus spurius. Orchard Oriole.—Locally a fairly common summer resident

breeding regularly and mainly along the Sound, and only a few scattered pairs elsewhere. April 30, 1890 (Bicknell) and May 3, 1924 (Kuerzi) to July 30, 1923 (Kuerzi) and August 28, 1881 (Bicknell).

Icterus galbula. Baltimore Oriole.—Common summer resident. April 27, 1914 (Spofford) and April 29, 1926 (Coles) to October 23, 1923 (Coles), and casually to the end of November, 1919 (numerous observers).

Euphagus carolinus. Rusty Blackbird.—Common transient, fairly frequent in winter. February 12, 1909 (Griscom) to May 13, 1922 (Kuerzi); September 18, 1881 (Bicknell) to December 27, 1925 (Cruickshank).

Quiscalus quiscula quiscula. Purple Grackle.—Common summer resident, arriving as early as February 15, 1880 (Bicknell); no record later than November 5, 1922.

Quiscalus quiscula æneus. Bronzed Grackle.—Probably a regular transient; a few Grackles are noted practically every winter which are probably this subspecies. March 8, 1913 (Griscom) to April 18, 1924 (Kuerzi); October to December 18, 1923, flock of over one thousand birds (Coles), and December 28, 1924, flock of over forty (Kuerzi).

Hesperiphona v. vespertina. Evening Grosbeak.—Irregular winter visitant. The earliest arrival dates are November 13, 1915 (R. S. Williams), and November 15, 1925 (Kessler, Kuerzi); the latest date is May 6, 1920, a fine male at the Botanical Garden (R. S. Williams).

Pinicola enucleator leucura. Pine Grosbeak.—Rare and irregular winter visitant. Abundant at Riverdale during the early part of 1884, remaining until March 23 (Bicknell); also April 1, 1875 and November 7, 1871 (Bicknell). The following are the recent records: January 2, 1916, flock of eight (Coles); January 6, 1917 (L. N. Nichols); December 5, 1921, eight birds (Brown); December 2, 1923, two birds (Kuerzi) and a single bird at the Botanical Garden several days later (F. F. Houghton).

Passer domesticus. House Sparrow.—Common permanent resident; a perceptible decrease in recent years; first seen April 11, 1879, at Riverdale (Bicknell).

Carpodacus p. purpureus. Purple Finch.—Common transient, uncommon in winter. September 14, 1923 (Kuerzi) to May 26, 1925 (Cruickshank); formerly bred.

Loxia curvirostra minor. American Crossbill.—Rare and irregular in spring, fall and winter; one breeding record. Abundant at Riverdale from November 3, 1874 to May 10, 1875, the nest and eggs found on April 22 (Bicknell). Most of the recent records are in April and May; flock of twelve birds as late as May 28, 1926 (Coles).

Loxia leucoptera. White-winged Crossbill.—Rare and irregular winter visitant. Common at Riverdale November 3, 1874 to May 10, 1875 (Bicknell); March 8, 1916, flock of eight (Coles); a few birds at the Zoological Garden, December 17, 1919 to February 8, 1920 (L. S. Crandall); February 17 and 18, 1920 (Coles); flock of about twelve birds at the Botanical Garden, January 20, 1923 to April 7, 1923 (numerous observers); February 2 to 24, 1923, a maximum of fourteen birds (Coles).

Acanthis linaria linaria. Redpoll.—Irregular winter visitant, occasionally

abundant. The most representative dates are November 13, 1878 (Bicknell) and May 4, 1875 (Bicknell).

Acanthis hornemanni exilipes. Hoary Redpoll.—Accidental visitant from the Arctic. Dr. Dwight collected a young male in Van Cortlandt Park, on March 24, 1888.

Astragalinus t. tristis. Goldfinch.—Common permanent resident, usually scarcer, and occasionally absent in winter. Migrants arrive from the south generally at about the middle of April.

Carduelis c. carduelis. European Goldfinch.—Recorded May 12-24, 1901 and January 1, 1902, at Riverdale (Bicknell).

Spinus pinus. Pine Siskin.—Common, frequently abundant, transient. September 27, 1925 (Coles) and October 4, 1925 (Kuerzi) to May 15, 1883 and June 10, 1893 (Bicknell). Occasionally winters in numbers.

Plectrophenax n. nivalis. Snow Bunting.—Irregular, and uncommon transient and winter visitant. November 1, 1926 (Kuerzi) to March 18, 1927 (Kuerzi).

Calcarius l. lapponicus. Lapland Longspur.—Rare and irregular winter visitant. October 22, 1923 (Coles), and November 3, 1925 (Cruickshank, Kuerzi) to March 13, 1912 (Coles).

Poæcetes g. gramineus. Vesper Sparrow.—Common transient, uncommon summer resident, rare in winter. March 13, 1922 (Herbert) to December 9, 1920, large flock, undoubtedly migrants (Coles). The following are the winter records: January 3, 1920 (Coles); January 6, 1925 (Hickey); January 4 to 31, 1925 (Coles); January 16, 17, 1924 (Coles); February 4, 1922 (Coles); February 13, 1925 (Cruickshank).

Passerculus princeps. Ipswich Sparrow.—Occasional transient, and winter visitor. October 29, 1916 (Coles) to March 28, 1926 (Kuerzi).

Passerculus sandwichensis savanna. Savannah Sparrow.—Common transient, several pairs breeding locally; occasional in winter. March 6, 1924 (Herbert), and March 13, 1923 (Kuerzi) normally to mid-November, but occasionally lingering into January, and sometimes wintering. The earliest fall arrival date is August 22, 1925 (Kassoy, Kuerzi).

Ammodramus savannarum australis. Grasshopper Sparrow.—Formerly a common summer resident; a few still breeding locally. April 17, 1926 (Coles) to October 29, 1921 (Coles).

Passerherbulus h. henslowi. Henslow's Sparrow.—Uncommon or rare transient. April 4, 1915; April 20, 1916 (L. N. Nichols) to May 20, 1925 (Coles); September 26, 1922 (Coles) to October 28, 1926 (Kessler, Kuerzi), and casually later.

Passerherbulus caudacutus. Sharp-tailed Sparrow.—Locally a common summer resident. April 10, 1923 (Herbert) to November 14, 1922 (Kuerzi), and occasionally later. December 26, 1926 (Kessler).

Passerherbulus m. maritimus. Seaside Sparrow.—Locally a fairly common summer resident. April 4, 1920 (Coles) is the earliest arrival date. Occasional in the fall as late as December 6, 1925 (Kuerzi), and December 27, 1925 (Kassoy, Matuszewski).

Zonotrichia l. leucophrys. White-crowned Sparrow.—Uncommon spring, occasionally fairly numerous fall transient. May 2, 1919 to May 27, 1919 (Coles);

September 28, 1926 (Kuerzi) to November 3, 1922 (Coles), and occasionally as late as November 14, 1925 (Kuerzi). A flock of 6 on April 28, 1880 (Bicknell).

Zonotrichia albicollis. White-throated Sparrow.—Common transient, and winter resident. September 12, 1924 (Kuerzi) to May 28, 1922 (Kuerzi).

Spizella m. monticola. Tree Sparrow.—Abundant winter resident. October 20, 1920 (Coles) to April 12, 1922, April 25, 1923 (Kuerzi), and April 29, 1875 (Bicknell).

Spizella p. passerina. Chipping Sparrow.—Very common summer resident. March 21, 1926 (Cruickshank) and March 22, 1923 (Kessler) to November 15, 1921 (Kuerzi). Two winter records: January 17, 1919 and December 24, 1921 (both by R. Coles).

Spizella p. pusilla. Field Sparrow.—Common summer resident, wintering regularly and occasionally in numbers; transients from the South appear to arrive about the first week in March.

Junco h. hyemalis. Slate-colored Junco.—Abundant transient, and common winter resident. September 10, 1923 (Kuerzi), and September 12, 1921 (Coles) to May 15, 1922 (Kuerzi), and occasionally as late as May 27, 1926 (Kessler) and June 2, 1926 (Coles).

Melospiza m. melodia. Song Sparrow.—Common permanent resident throughout.

Melospiza l. lincolni. Lincoln's Sparrow.—Uncommon but regular transient. April 25, 1922 (Pangburn) to May 26, 1920 (Kuerzi); September 12, 1925 (Coles) to October 12, 1912 (Griscom, Ladow).

Melospiza georgiana. Swamp Sparrow.—Fairly common permanent resident, somewhat scarcer in winter.

Passerella i. iliaca. Fox Sparrow.—Common, occasional abundant transient, frequently wintering. February 6, 1921, and February 13, 1922 (Kuerzi) to April 30, 1886 (Dwight); October 1, 1880 (Bicknell); October 9, 1922 (Kuerzi), and October 12, 1925 (Coles) to January 2, 1920 (Kuerzi).

Pipilo e. erythrophthalmus. Towhee.—Common summer resident. April 13, 1925 (Kuerzi) to December 23, 1921 (Kuerzi). There are a few records in January, February and March.

Cardinalis c. cardinalis. Cardinal.—Formerly bred; now probably only an occasional visitant. A pair at the Botanical Garden, during the spring and summer of 1917, doubtless bred (F. F. Houghton and others); a singing male in the same locality from February 22, 1921 to August 17, 1921 (numerous observers); a pair bred at Scarsdale in 1922, 1923, and probably 1924 (Kuerzi). Otherwise an occasional visitant. April 9, 1916 (L. N. Nichols); December 29, 1916, three birds (Coles); December 25, 1916, flock of six (L. N. Nichols); May 12, 1919, one male (Coles); February 1, 1920 (W. Beebe); May 19, 1922 (Coles); May 24, 1923, female (Coles).

Zamelodia ludoviciana. Rose-breasted Grosbeak.—Fairly common summer resident, subject to some variation in numbers from year to year. April 28, 1925 (Kassoy), and May 1, 1922 (Kuerzi) to October 21, 1921 (L. N. Nichols).

Passerina cyanea. Indigo Bunting.—Common summer resident. April 26, 1925 (Coles), April 29, 1924 (Matuszewski, Kuerzi), and May 1, 1922 (Kuerzi) to October 16, 1924 (Coles).

Piranga erythromelas. Scarlet Tanager.—Common summer resident. April 29, 1881 and May 3, 1878 (Bicknell) to October 23, 1922 (Kuerzi).

Progne s. subis. Purple Martin.—Rare transient and summer resident, breeding at Rye and possibly further southward. April 13, 1921 (Coles) to September 24, 1925 (Coles). In recent years there seems to have been a slight increase in transients locally.

Petrochelidon l. lunifrons. Cliff Swallow.—Uncommon but regular transient. April 19, 1919 (Coles) to May 29, 1921 (Kuerzi), and casually later; July 2, 1883 (Bicknell) to October 6, 1921 (L. N. Nichols).

Hirundo erythrogastra. Barn Swallow.—Common summer resident. April 7, 1923 (Kessler), and April 11, 1923 (Kuerzi) to October 21, 1922 (Kuerzi), and casually to November 9, 1920 (Coles).

Iridoprocne bicolor. Tree Swallow.—Common, frequently abundant transient. March 20, 1919 (Coles) to June 13, 1926 (Herbert); June 20, 1923 (Kessler), and July 1, regularly to October 31, 1909 (Griscom), and occasionally as late as December 6, 1919 (Coles).

Riparia riparia. Bank Swallow.—Common transient, occasionally breeding where favorable habitat happens to exist. April 2, 1925 (Coles) to September 20, 1921 (Kuerzi); casual October 11, 1891 (Bicknell).

Stelgidopteryx serripennis. Rough-winged Swallow.—Fairly common summer resident. April 10, 1926 (Hickey, Quindry) to September 9, 1877 (Bicknell).

Bombycilla cedrorum. Cedar Waxwing.—Common transient, uncommon summer resident, occasional in winter. February 27, 1919 (Coles); March 9 and 20, 1923 (Kuerzi); April 27, 1922 (Kuerzi) to December 7, 1920 (Coles), and December 27, 1924 (Kuerzi).

Lanius borealis. Northern Shrike.—Irregular winter visitant, sometimes absent, occasionally fairly numerous as in the winter of 1921-1922. October 30, 1881 and October 31, 1875 (Bicknell) to April 12, 1922 (Kuerzi), and April 22, 1922 (Coles).

Lanius ludovicianus migrans. Migrant Shrike.—Somewhat irregular and uncommon fall transient. August 4, 1924 (L. N. Nichols) to November 12, 1922 (Kuerzi), and rarely as late as December 13 and 16, 1925 (Kassoy, Kessler, Kuerzi). Very rare in spring, April 24, 1926 (A. Cruickshank).

Vireosylva olivacea. Red-eyed Vireo.—Very common summer resident. April 24, 1913 (L. N. Nichols) to October 27, 1921 (Kuerzi), and casually to November 14, 1926 (Cruickshank).

Vireosylva philadelphia. Philadelphia Vireo.—Rare transient; specimen collected September 17, 1885 (Dwight). There are several recent sight records: September 23, 1923 (G. E. Hix); October 3, 1923 (R. C. Murphy); May 7, 1926 (Kessler), and May 21, 1920 (Starck).

Vireosylva g. gilva. Warbling Vireo.—Uncommon summer resident. April 28, 1923 (Kuerzi) to September 20, 1925 (Kuerzi). On October 12, 1922, a single bird was discovered at the Botanical Garden which was singing "in snatches" (F. F. Houghton, Kuerzi).

Lanivireo flavifrons. Yellow-throated Vireo.—Fairly common summer resident; there has been a perceptible increase in recent years. April 26, 1879 (Bick-

nell), April 27, 1924 (Cruickshank), and April 28, 1922 (Kuerzi) to September 29, 1921, and October 1, 1920 (Kuerzi).

Lanivireo s. solitarius. Solitary Vireo.—Fairly common transient. April 20, 1923 (R. S. Williams) to May 28, 1925 (Kuerzi); September 13, 1922 (Herbert) to October 26, 1922 (Kuerzi), and October 27, 1876 (Bicknell); probably casual on September 9, 1877 (Bicknell).

Vireo g. griseus. White-eyed Vireo.—Fairly common summer resident; April 29, 1880 (Bicknell) to October 2, 1920 (Kuerzi and others).

Mniotilta varia. Black and White Warbler.—Common summer resident. April 18, 1880 (Bicknell) to Oct. 23, 1926 (Kuerzi), and casually to Nov. 1, 1921 (Coles).

Protonotaria citrea. Prothonotary Warbler.—Very rare visitant in spring; a singing male between Van Cortlandt Park and Yonkers, June 2, 1895 (E. P. Bicknell); another at the Botanical Garden, May 13 to 16, 1923 (numerous observers); male bird on the estate of R. R. Coles, June 6, 1924; and lastly a fine male in full song, under observation for over a half hour, at the Botanical Garden, April 28, 1925 (F. Ruff)

Helmintheros vermivorus. Worm-eating Warbler.—Fairly common transient and summer resident. April 30, 1922 (Kuerzi) to September 20, 1923 (Kuerzi), and casually to October 2, 1925 (Coles).

Vermivora pinus. Blue-winged Warbler.—Common summer resident. April 26, 1913 (G. K. Noble) to September 25, 1921 (Kuerzi). Reported as seen in the Botanical Garden in December, many years ago, and a fresh specimen was picked up there on January 6, 1900, by Mrs. E. G. Britton. According to Mr. Williams, the bird died but a short time before, and it was perfectly limp when found.

Vermivora chrysoptera. Golden-winged Warbler.—Uncommon but regular spring and fall transient. May 4, 1925 and 1926 (Kuerzi) to May 21, 1925 (Kuerzi); July 20, 1921 (F. F. Houghton) to September 15, 1922 (Kuerzi), and casually later.

Vermivora "leucobronchialis." Brewster's Warbler.—Transients have been noted from May 9, 1923 (numerous observers) to May 25, 1924 (Kessler, Kuerzi). On May 29, 1926, a female Brewster's Warbler was found mated to a Blue-wing on the Grassy Sprain Ridge (T. D. Carter, Kuerzi). The nest was found on June 6, and the female and young birds banded. A male Brewster's Warbler was subsequently found nearby, presumably unmated, but once observed in song; last seen July 3 (Carter, Kuerzi).

Vermivora "lawrenci." Lawrence's Warbler.—Transients have been observed on May 7, 1925 (Coles); May 9, 1924, at Kingsbridge (Cruickshank); and for several years in September at the Botanical Garden, the last September 10, 1925 (Kessler, Kuerzi). Found breeding at Bronx Park in 1903 and the next year another returned but did not remain (Wiegmann, Beebe). Bred in Van Cortlandt Park in 1923; discovered by I. Farfel. A male Lawrence's Warbler has been found annually in May, on the Sprain Ridge, since about 1923. In 1926 it arrived as early as May 15; was observed in full song on June 6; and on June 12, the nest was found; the mate of *V. Lawrenci* being a female *V. Pinus*. The male bird, and the young were banded on June 12, and the female bird five days later (T. D. Carter, Kuerzi). Mr. Carter subsequently found the nest of what he believed

to be a female Lawrence's Warbler, nearby, but unfortunately this was destroyed before the eggs hatched.

Vermivora r. rubricapilla. Nashville Warbler.—Common transient. April 26, 1925 (Kuerzi) to May 30, 1924 (Kuerzi); August 16, 1919 (Coles) to October 18, 1925 (Kuerzi). Casual December 16, 1917 to January 9, 1918 (Chubb).

Vermivora c. celata. Orange-crowned Warbler.—Very rare transient. October 9 and 29, 1876 (Bicknell); October 18, 1925 (Kessler, Kuerzi); January 20, 1926 (Cruickshank); a single bird at the Botanical Garden, May 13, 1926 (Kuerzi), and Mr. Coles reports seeing two birds on the same date, several miles to the north.

Vermivora peregrina. Tennessee Warbler.—Regular and fairly common spring, sometimes abundant fall transient. May 6, 1923 (Kuerzi) to May 30, 1917 (Janvrin); August 9, 1923 (Griscom) to October 17, 1921 (Griscom).

Compsothlypis americana usneæ. Parula Warbler.—Very common transient. April 23, 1919 (Coles), and April 26, 1878 (Bicknell) to June 8, 1879 (Bicknell); August 14, 1923 (Kuerzi) to October 18, 1922, and casually to October 28, 1921 (Kuerzi). A singing male just west of the Grassy Sprain Ridge, from June 10, until after the middle of July, 1923, probably bred (Kuerzi).

Dendroica tigrina. Cape May Warbler.—Fairly common spring and fall transient; May 6, 1924 (Kuerzi) to May 31, 1917 (L. N. Nichols), and June 5, 1926 (Kuerzi); August 22, 1880 (Bicknell) to October 14, 1922 (G. E. Hix).

Dendroica æ. æstiva. Yellow Warbler.—Common summer resident. About April 20, 1922 and April 27, 1923 (Kessler, Kuerzi) to September 25, 1921 (Kuerzi), and casually to October 5, 1924 (Coles).

Dendroica c. carulescens. Black-throated Blue Warbler.—Common transient. April 26, 1925 (Kuerzi) to May 28, 1882 (Bicknell); August 16, 1922 (Kuerzi) to October 29, 1876 (Bicknell); casual November 27, to December 9, 1906, at Irvington (L. Dunham); on the latter date the bird was found dead and sent to the American Museum of Natural History.

Dendroica coronata. Myrtle Warbler.—Abundant transient, occasionally wintering. April 5, 1922 (Kuerzi) to May 28, and June 5, 1923 (Coles); August 23, 1922 (Kuerzi), and September 6, 1924 (Kuerzi) to November 16, 1921 (Kuerzi).

Dendroica magnolia. Magnolia Warbler.—Very common transient. May 1, 1922 (L. N. Nichols), and May 2, 1919 (Coles) to June 12, 1922 (Kuerzi); August 15, 1923 (Kuerzi) to October 19, 1876 (Bicknell), and casually later.

Dendroica cerula. Cerulean Warbler.—An adult male in full song, carefully studied on May 4, 1921 (Dr. W. H. Wiegmann); another very satisfactorily observed on May 27, 1926, at Van Cortlandt Park (A. Cruickshank).

Dendroica pensylvanica. Chestnut-sided Warbler.—Common transient, and fairly common summer resident. April 26, 1925 (Coles) to September 23, 1922 (Kuerzi); casual October 4, 1921 (Kuerzi), and October 9, 1922 (Coles).

Dendroica castanea. Bay-breasted Warbler.—Common transient; May 4, 1919 (Coles) to June 6, 1922 (Kuerzi); August 16, 1923 (Kuerzi) to October 4, 1925 (Kuerzi); casual July 26, 1875 (Bicknell), and a fully plumaged male, about July 25, 1919 (Kuerzi); one collected October 13, 1876 (Bicknell).

Dendroica striata. Blackpoll Warbler.—Abundant transient; May 3, 1878

(Bicknell) to June 11, 1921 (Coles), and June 17, 1926 (Kuerzi); September 2, 1923 (Kuerzi) to October 29, 1922 (Kuerzi), and casually to November 1, 1926 (Kuerzi); lingered until July 5, 1886 (Bicknell).

Dendroica d. dominica. Yellow-throated Warbler.—Very rare, one record, an adult on Quaker Ridge, May 18 to 21, 1925 (R. R. Coles). (See Auk, October, 1925, page 591.)

Dendroica fusca. Blackburnian Warbler.—Common transient. May 1, 1926 (Kuerzi) to June 6, 1926 (Coles); August 12, 1922 (Kuerzi) to October 4, 1925 (Coles).

Dendroica virens. Black-throated Green Warbler.—Common transient; several pairs breeding locally. April 21, 1920 (Kuerzi) to June 9, 1922 (Kuerzi); August 21, 1922 to October 31, 1925 (Kuerzi), and casually to November 7, 1919 (Coles).

Dendroica vigorsii. Pine Warbler.—Uncommon transient; perhaps breeding about Kensico Reservoir (Coles). March 24, 1924 (Kuerzi) to May 10, 1920 (Kuerzi); September 23, 1921 (Coles), and September 25, 1923 (Kuerzi) to November 7, 1926 (Kuerzi), and early December, several years ago (numerous observers).

Dendroica palmarum palmarum. Palm Warbler.—Uncommon transient; chiefly in fall. April 20, 1919 (C. L. Lewis) to May 15, 1926 (Kessler, Kuerzi); September 5, 1920 (F. F. Houghton) to October 26, 1920 (Starck).

Dendroica palmarum hypochrysea. Yellow Palm Warbler.—Common transient. (March 24, 1924); April 3, 1921 (Kuerzi) to May 18, 1913 (L. N. Nichols); September 16, 1924 (Kuerzi) to November 11, 1922 (Kuerzi), and occasionally as late as November 27, 1924 (Coles).

Dendroica discolor. Prairie Warbler.—Common spring, fairly common fall transient. April 26, 1925 (Kuerzi) to May 28, 1922 (Kuerzi), and occasionally later; August 16, 1923 (Kuerzi) to September 30, 1922 (Kuerzi), and casually later.

Seiurus aurocapillus. Ovenbird.—Common, frequently abundant transient; common summer resident. April 15, 1920 (Kuerzi), and April 26, 1923 (Hickey) to October 22, 1921 (Kuerzi), and casually to November 6, 1917 (E. G. Nichols).

Seiurus n. noveboracensis. Water-thrush.—Common transient. April 23, 1924 (Coles) to June 8, 1922 (Kuerzi); July 30, 1923 (Kuerzi) to October 9, 1921 (R. S. Williams), and casually to October 20, 1921 (Kuerzi).

Seiurus motacilla. Louisiana Water-thrush.—Fairly common summer resident. April 7, 1922 to October 4, 1923 (Kuerzi).

Oporornis formosus. Kentucky Warbler.—Rare transient and summer resident several pairs breeding on the Elmsford Ridge above Worthington, and locally northward. Formerly of more general distribution. There is no reliable arrival date earlier than May 12, and the latest fall record is September 11, 1925 (Kuerzi).

Oporornis agilis. Connecticut Warbler.—Irregular fall transient, sometimes unrecorded, occasionally fairly numerous. August 20, 1922 (F. E. Watson) to October 12, 1925 (Cruikshank).

Oporornis philadelphia. Mourning Warbler.—Rare transient. May 18, 1913, and 1918 (L. N. Nichols) to June 1, 1925 (Herbert), and June 5, 1922 (Coles); August 5, 1926 (Kuerzi) to September 24, 1924 (Coles).

Geothlypis t. trichas. Maryland Yellow-throat.—Very common summer resident. April 26, 1921 (Kuerzi) to October 24, 1875 (Bicknell); casual November 3, 1925 (Kuerzi), and November 15, 1921, specimen collected (Coles).

Icteria v. virens. Yellow-breasted Chat.—Fairly common summer resident, locally abundant on the Sprain Ridge in summer. May 1, 1922 (Kuerzi) to October 3, 1921 (Kuerzi), and October 7, 1922 (Coles).

Wilsonia citrina. Hooded Warbler.—In recent years, a regular though uncommon transient; fairly common, and increasing in most of the wooded sections, as a summer resident. May 2, 1925 (Cruickshank, Kuerzi) to September 26, 1921 (Kuerzi), and casually to October 1, 1923 (Coles).

Wilsonia p. pusilla. Wilson's Warbler.—Fairly common spring, uncommon fall transient. May 8, 1926 (Kuerzi) to June 6, 1923 (Kuerzi); August 14, 1922 (Kuerzi) to September 29, 1916 (Coles), and October 9, 1922 (Kuerzi), and casually to November 22, 1885 (Bicknell).

Wilsonia canadensis. Canadian Warbler.—Very common transient. May 2, 1925 (Coles), and May 3, 1924 (Kuerzi) to June 11, 1921 (Kuerzi); August 9, 1923 (Kuerzi) to September 30, 1922 (Kuerzi), and casually to October 29, 1904 (Hix, Wiegmann).

Setophaga ruticilla. Redstart.—Abundant transient, and common summer resident. April 24, 1923 (Kessler) to October 16, 1921 (Kuerzi), and casually to November 16, 1923 (Coles).

Anthus rubescens. Pipit.—Uncommon spring, common fall transient. February 22, 1925 (Kassoy, Herbert), and February 28, 1919 (Coles) to May 15, 1926 (Cruickshank); September 18, 1924 (Kuerzi) to December 1, 1923 (Coles). Casually as early as August 28, 1925 (Kuerzi).

Mimus p. polyglottos. Mockingbird.—Recorded October 28 to November 21, 1877; October 29 to November 9, 1878; October 9, 1880; July 23, 1884 (all Bicknell); September 30 to October 22, 1910 (Coles); February 17, 1912 (Griscom, Hix); May 6 to 14, 1919 (Coles); February 9, 1920 (L. S. Crandall); October 9, 1922 (Kuerzi).

Dumetella carolinensis. Catbird.—Very common summer resident; several winter records. April 16, 1925 (Hickey), and April 25, 1878 (Bicknell) to November 30, 1884 (Bicknell), and December 25, 1921 (F. F. Houghton, and others); a single bird spent the winter of 1922-1923 at the Botanical Garden (numerous observers).

Toxostoma rufum. Brown Thrasher.—Common summer resident. April 10, 1925 (Cruickshank) to November 1, 1921 (Kuerzi), and November 22, 1925 (Hickey); one during the winter of 1919 (F. F. Houghton).

Thryothorus l. ludovicianus. Carolina Wren.—Occasional visitant, and rare permanent resident. There are numerous recent records in all seasons.

Troglodytes a. aedon. House Wren.—Common summer resident. April 12, 1922 (Kessler), and April 13, 1921 (Kuerzi) to October 23, 1926 (Kuerzi).

Nannus h. hiemalis. Winter Wren.—Fairly common transient, frequently wintering. September 17, 1924 (Kuerzi) to May 13, 1922 (Coles).

Cistothorus stellaris. Short-billed Marsh Wren.—Formerly bred in several different localities; now a rare transient, and summer resident. April 22, 1919, and

May 3, 1926 (Coles) to September 25, 1924 (Coles), and 1925 (Cruickshank), and October 23, 1880 (Bicknell).

Telmatodytes p. palustris. Long-billed Marsh Wren.—Locally a common or abundant summer resident. April 19, 1924 (Herbert) to November 14, 1922 (Kuerzi), and casual to December, and January.

Certhia familiaris americana. Brown Creeper.—Common transient, and fairly common winter resident; one breeding record. September 3, 1919 (Starck) to May 15, 1924 (Coles). On May 27, 1926, a nest with young was found in the Van Cortlandt Park swamp (A. D. Cruickshank).

Sitta c. carolinensis. White-breasted Nuthatch.—Fairly common permanent resident.

Sitta canadensis. Red-breasted Nuthatch.—Irregular transient, sometimes numerous; occasionally wintering. Definitely southbound July 10, 1878 and abundant by August 12 (Bicknell); also southbound July 18 and August 8, 1889 (Bicknell); earliest in recent years August 19, 1921 (F. Houghton); remaining until May 24, 1924 (Kuerzi) and casually to June; casual July 1 to 5, 1886 (Bicknell).

Bæolophus bicolor. Tufted Titmouse.—Occasional visitant. November 29, 1874 to March 28, 1875, at Riverdale (Bicknell); February 12, 1911 (Griscom); late March, 1914 (A. A. Saunders); November 6, 1919 (L. N. Nichols) to May 20, 1920, at the Botanical Garden (numerous observers); May 15, 1922 (Cruickshank); March 23, to April 7, 1924 (Coles).

Penthestes a. atricapillus. Black-capped Chickadee.—Permanent resident; fairly common in summer, usually abundant during migrations and in winter, but notably absent during the winter of 1922-1923.

Penthestes hudsonicus nigricans. Labrador Chickadee.—A Brown-capped Chickadee, presumably *nigricans* was discovered in Van Cortlandt Park on October 29, 1916 (C. L. Lewis); also November 25 to December 30, 1916, near New Rochelle Lake, a maximum of five birds (Coles).

Regulus s. satrapa. Golden-crowned Kinglet.—Common transient, and fairly common in winter. September 10, 1898 (Bicknell) and September 12, 1923 (Kuerzi) to May 3, 1923 (Kuerzi), and May 7, 1920 (Coles).

Regulus c. calendula. Ruby-crowned Kinglet.—Common transient, occasional in winter. March 20, 1927 (Kuerzi) to May 21, 1925 (Coles); September 14, 1922 (Kuerzi) to November 22, 1925 (Coles); December 23, 1921 (Kuerzi); December 26, 1925 (Cruickshank); January 18, 1885 (Bicknell); January 11, 1921 (S. H. Chubb); February 3, 1924 (Kuerzi).

Polioptila c. cærulea. Blue-gray Gnatcatcher.—Rare visitant, or perhaps transient; there are about twelve records in the past ten years. April 15, 1912 (Coles), and April 25, 1924 (Kuerzi) to May 20, 1926 (Cruickshank); the only fall records are September 3, 1925 (Cruickshank), and September 12, 1895, specimen taken at New Rochelle (E. I. Haines); October 11, 1926 (Kuerzi).

Hylocichla mustelina. Wood Thrush.—Common summer resident. April 23, 1896 (Bicknell) to October 23, 1921 (Kuerzi), and casually later.

Hylocichla f. fuscescens. Wilson's Thrush.—Common summer resident. April 12, 1912 (G. K. Noble); April 27, 1923 (Kuerzi) to September 28, 1881 (Bicknell).

Hylocichla aliciae aliciae. Gray-cheeked Thrush.—Common transient. May

5, 1887 (Bicknell); May 7, 1922 (Starck) to June 2, 1921 (Coles), and June 6, 1886 (Bicknell); September 9, 1922 (Kuerzi) to October 21, 1916 (C. L. Lewis).

Hylocichla aliciae bicknelli. Bicknell's Thrush.—Specimens collected May 16, 1887 and May 12, 1890 (Dwight); May 24, 1877, May 16, 1883, September 20, 1881 (Bicknell).

Hylocichla ustulata swainsoni. Olive-backed Thrush.—Very common transient. April 28, 1925 (Coles), and May 2, 1922 (Kuerzi) to June 5, 1921 (Kuerzi); September 3, 1922 (Kuerzi) to October 18, 1925 (Kessler, Kuerzi), and casually to November 3, 1923 (Kuerzi).

Hylocichla guttata pallasi. Hermit Thrush.—Common transient; occasionally wintering. March 23, 1922 (Kuerzi) to May 17, 1920 (Kuerzi); September 23, 1922 (Kuerzi) to the end of November, and frequently into December; casual August 11, 1926, Riverdale (Griscom).

Planesticus m. migratorius. Robin.—Abundant summer resident, frequently wintering. There was a decided flight, presumably from the south, January 22 and 23, 1926 (Cruickshank, Kuerzi, and others), although such flights normally do not occur until several weeks later.

Sialia s. sialis. Bluebird.—Common transient, fairly common summer resident, occasionally wintering. January 29, 1925 (Kessler, Kuerzi), and February 6, 1922 (Kuerzi) to December 29, 1925 (Kuerzi). There are numerous records in January and February.

Birds of Prospect Park, Brooklyn

BY LESTER L. WALSH

The section of country which is worked the most consistently yields the most satisfactory results. Information of greater value can be secured by systematic observation in a restricted area than by spasmodic trips to areas made attractive by distance.

The purpose of this paper is to present in tabulated form the results of consistent observation on the part of four local ornithologists of the bird life of Prospect Park, Brooklyn, N. Y. The ensuing notes represent a period of seventeen years' work, from 1908 to 1925 inclusive, supplemented by occasional notes of a few others.

Change in physical aspect of the Park may be traced by changing bird life. Modern "improvements" are most disastrous to the wild life of any region. This is perhaps only a corollary of a developing industrial center.

Although centrally located in a large metropolis Prospect Park seems to have been signally neglected by those interested in the study of birds. Parks of similar character in other cities have long received their full share of attention. The number of those whose observations bear the stamp of consistency may fairly be counted on the fingers of one hand, but the lack in numerical force may be said to be overbalanced by the zeal of the few. Upwards of one hundred trips annually have been made by one devotee over a period of years.

As an analogy, the dearth of published material may be expected. Nothing of scientific value has been attempted. Several contributions have appeared at various times in local publications, dealing in a very restricted way with certain general phases of the bird life of the Park. The earliest data that have come to the writer's attention concerning bird observation in Prospect Park date back to 1883 when an article appeared in *Forest and Stream* in which a list of some eighty birds is given. It is, however, so full of obvious misidentifications that its value is chiefly historical. Since that time several fragmentary lists have appeared, the importance of which has been materially decreased by the lack of specific data.

It is interesting to note that the following species are definitely known to have nested within the borders of the Park: Black Duck, Black-crowned Night Heron, Sparrow Hawk, Screech Owl, Yellow-billed Cuckoo, Black-billed Cuckoo, Downy Woodpecker, Flicker, Chimney Swift, Nighthawk, Ruby-throated Hummingbird, Crested

Flycatcher, Wood Pewee, Fish Crow, Starling, Cowbird, Baltimore Oriole, Purple Grackle, House Sparrow, Song Sparrow, Chipping Sparrow, Scarlet Tanager, Red-eyed Vireo, Yellow-throated Vireo, Yellow Warbler, Catbird, Brown Thrasher, House Wren, Wood Thrush and Robin. The number has somewhat decreased within recent years, but it is safe to say that twenty of the list still nest in the Park. The permanent residents may be mentioned as follows: Sparrow Hawk, Screech Owl, Downy Woodpecker, American Crow, Starling, Song Sparrow, House Sparrow and Robin.

The writer desires to express his appreciation to the following for permission to use material in their notes: Dr. and Mrs. E. W. Viator, around whose untiring efforts the present list is formed, Mr. Edward Fleisher and Mr. Jerome Allen.

Colymbus holboelli. Holboell's Grebe.—Casual visitant. March 3, 1921 (Allen) and March 16, 1918 (Fleisher).

Podilymbus podiceps. Pied-billed Grebe.—No spring records, rare fall transient. September 13, 1917 to November 24, 1912 (Viator).

Gavia immer. Loon.—Frequently seen flying over singly and in small groups during migration.

Rissa tridactyla. Kittiwake.—Very rare winter visitant. March 13, 1918 (Viator). Regarding this record Dr. Viator has to say, "Among many hundred gulls I saw this Kittiwake with black feet."

Larus argentatus. Herring Gull.—Commonly observed resting on the lake or passing over park. September 8, 1918 to May 20, 1921 and May 28, 1912 (Viator).

Larus delawarensis. Ring-billed Gull.—Uncommon winter visitant; four records worthy of consideration. December 12, 1915, December 22, 1918 (Viator), January 1, 1924 (Walsh) and March 9, 1913 (Viator).

Larus atricilla. Laughing Gull.—One record. July 6, 1915 (Viator).

Sterna hirundo. Common Tern.—One record. August 12, 1917 (Viator).

Mergus americanus. American Merganser.—One record. January 1, 1924 (Walsh).

Mergus serrator. Red-breasted Merganser.—Uncommon spring visitant; no fall records. April 14, 1920 (Viator) and May 6, 1926 (Miss Elizabeth Tompkins).

Lophodytes cucullatus. Hooded Merganser.—Uncommon fall and winter transient. August 12, 1913 to December 12, 1914 (Viator).

Anas rubripes. Black Duck.—Formerly alighted during migrations; descendants of liberated, wing-tipped birds now resident.

Nettion carolinense. Green-winged Teal.—Rare transient. November 21 to 29, 1924 (Walsh). Doubtless same bird.

Aix sponsa. Wood Duck.—Uncommon transient. March 18, 1916 (Fleisher) to March 23, 1916 (Viator); September 23, 1915 (Fleisher) to January 1, 1913 (Viator).

Marila americana. Redhead.—Casual on the lake. October 14, 1918; March 19, 1911 (Viator) to March 22, 1914 (Fleisher). None seen in recent years.

Clangula clangula americana. American Golden-eye.—Very rare winter visitant. December 12, 1914 (Viotor).

Charitonetta albeola. Bufflehead.—Very rare winter visitant. November 10, 1924 (Walsh).

Branta c. canadensis. Canada Goose.—Formerly alighted during migrations; now infrequently seen passing over. Descendants of wing-tipped birds resident.

Botaurus lentiginosus. American Bittern.—Rare visitant. September 16, 1911 (Viotor).

Ardea h. herodias. Great Blue Heron.—Uncommon transient. May 11, 1917 to June 14, 1910; July 3, 1918 to September 30, 1913 (Viotor).

Florida cærulea. Little Blue Heron.—Once; reported by Dr. Viotor on August 15, 1915; immature birds.

Butorides v. virescens. Green Heron.—Regular spring and fall transient. April 15, 1910 (Viotor), April 20, 1925 (Walsh) to June 1, 1909 (Viotor); July 8, 1914 to September 24, 1913 (Viotor). The best place to observe this bird in the Park is in the small pool west of the Quaker cemetery.

Nycticorax nycticorax naevius. Black-crowned Night Heron.—Formerly permanent resident; now absent in winter; has been known to breed. Arrives in recent years in late March.

Rallus virginianus. Virginia Rail.—One record. October 22, 1918 (Allen).

Gallinula galeata. Florida Gallinule.—Uncommon transient. May 4, 1918 (Allen) to May 26, 1918 (Viotor).

Fulica americana. American Coot.—Casual spring and fall transient. April 14 (Viotor) to 17 (Allen), 1918; November 11 (Viotor) to 21 (Fleisher), 1914.

Philohela minor. American Woodcock.—Uncommon transient. March 7, 1909, July 31, 1921 (Viotor), August 17, 1908 to December 13, 1908 (Fleisher).

Pisobia minutilla. Least Sandpiper.—Casual spring transient. May 10, 1913 (Viotor) and May 20, 1913 (Fleisher).

Calidris leucophæa. Sanderling.—One record. July 6, 1915 (Viotor).

Totanus melanoleucus. Greater Yellow-legs.—Casual transient. May 19, 1916 (Fleisher) and May 21, 1916 (Viotor), possibly the same bird; August 14, 1918 (Viotor).

Helodromas s. solitarius. Solitary Sandpiper.—Regular spring and fall transient. April 27, 1915 to June 1, 1909; July 17, 1921 to October 8, 1911 (Viotor).

Actitis macularia. Spotted Sandpiper.—Common spring and fall transient. April 21, 1916 to June 7, 1909; July 6, 1919 (Viotor) to October 8, 1910 (Fleisher).

Oxyechus vociferus. Killdeer.—Rare transient. December 13, 1914 and May 10, 1921 (Viotor). This bird occurs more frequently in the open country surrounding the Park. I have seen it on the Parade Grounds.

Colinus v. virginianus. Bob-white.—One record. November 4, 1917 (Viotor). Doubtless a former resident of the Park.

Zenaidura macroura carolinensis. Mourning Dove.—One record. October 20, 1918 (Viotor).

Cathartes aura septentrionalis. Turkey Vulture.—Uncommon spring visitant. March 19, 1908 (Fleisher) to May 13, 1914 (Viotor).

Circus hudsonius. Marsh Hawk.—Uncommon during migration. March 10,

1909 (Fleisher) to May 29, 1910 (Viotor); August 20, 1914 to October 16, 1912 (Viotor).

Accipiter velox. Sharp-shinned Hawk.—Regular spring and fall transient. Has occurred during every month except July. There are several winter records. March 24, 1918 to May 30, 1913 (Viotor); August 28, 1912 to December 10, 1913 (Viotor).

Accipiter cooperi. Cooper's Hawk.—Irregular transient. March 16, 1913 (Fleisher) to June 26, 1910 (Viotor); August 15, 1917 to December 1, 1912 (Viotor).

Buteo b. borealis. Red-tailed Hawk.—Uncommon during migration. March 26, 1915 to April 25, 1915 (Viotor); September 4, 1910 (Viotor) to December 3, 1922 (Walsh).

Buteo l. lineatus. Red-shouldered Hawk.—Has been recorded every month except February and July. Uncommon and irregular transient. March 10, 1909 (Fleisher) to May 12, 1912 (Viotor); September 25, 1921 to January 7, 1916 (Viotor).

Buteo platypterus. Broad-winged Hawk.—Rare transient; frequently misidentified. April 18, 1920 (Viotor) to April 26, 1924 (Walsh); September 6, 1909 to November 30, 1909 (Viotor).

Archibuteo lagopus sancti-johannis. Rough-legged Hawk.—Rare winter visitant. November 7, 1917 and March 26, 1915 (Viotor).

Aquila chrysaetos. Golden Eagle.—Recorded by Dr. Braislin on May 1, 1902, in his "Birds of Long Island."

Haliaeetus l. leucocephalus. Bald Eagle.—One record. May 28, 1909 (Viotor).

Falco peregrinus anatum. Duck Hawk.—Occurs irregularly during fall and winter. October 15, 1913 (Viotor) to February 23, 1921 (Walsh).

Falco c. columbarius. Pigeon Hawk.—Uncommon spring, rare fall transient. Several winter records are open to suspicion. April 17, 1912 (Viotor) to May 2, 1914 (Fleisher); September 7, 1911 (Viotor) to October 3, 1914 (Fleisher).

Falco s. sparverius. Sparrow Hawk.—Permanent resident; irregular in winter. Breeds regularly in the Quaker cemetery.

Pandion haliaetus carolinensis. Fish Hawk.—Frequently seen fishing in the lake. Recorded daily during the summer of 1917. Uncommon transient. March 27, 1908 to June 2, 1916; September 19, 1909 to November 15, 1908 (Viotor).

Asio wilsonianus. Long-eared Owl.—Irregular winter visitant; has not been recorded in recent years. November 26, 1909 to February 13, 1910 (Viotor).

Cryptoglaux a. acadia. Saw-whet Owl.—Casual in winter. October 30, 1907 (Viotor).

Otus a. asio. Screech Owl.—Permanent resident; a few pairs breeding.

Coccyzus a. americanus. Yellow-billed Cuckoo.—Uncommon summer resident. May 11, 1912 (Viotor) to October 12, 1915 (Fleisher).

Coccyzus erythrophthalmus. Black-billed Cuckoo.—Irregular summer resident. May 9, 1912 to October 5, 1913 (Viotor).

Ceryle alcyon. Kingfisher.—Common transient; has spent at least four summers. March 25, 1912 to May 30, 1920; one winter record, December 12, 1915 (Viotor).

Dryobates v. villosus. Hairy Woodpecker.—Irregular winter visitant. September 16, 1917 to May 2, 1918 (Viotor).

Dryobates pubescens medianus. Downy Woodpecker.—Common permanent resident.

Sphyrapicus v. varius. Yellow-bellied Sapsucker.—Regular spring and fall transient. March 27, 1910 to May 11, 1917; September 21, 1911 to November 9, 1910; one midsummer record, July 14, 1909 (Viotor).

Melanerpes erythrocephalus. Red-headed Woodpecker.—Rare spring, uncommon fall transient. May 10, 1924 (Walsh); September 4, 1908 (Fleisher) to October 28, 1923 (Walsh).

Colaptes auratus luteus. Flicker.—Common summer resident; several winter records. March 20, 1921 (Viotor) to December 31, 1913 (Viotor), January 18, 1914 (Fleisher), February 8, 1914 (Viotor), and February 24, 1922 (R. Friedmann).

Antrostomus v. vociferus. Whip-poor-will.—Uncommon spring and fall transient. May 20, 1917 to June 1, 1909; September 8, 1908 and September 28, 1913 (Viotor).

Chordeiles v. virginianus. Nighthawk.—Breeds on gravelly roofs of Brooklyn houses and doubtless on Park buildings. May 15, 1925 (Walsh) to October 20, 1915 (Viotor).

Chatura pelagica. Chimney Swift.—Common summer resident. April 26, 1912 (Fleisher) to October 6, 1915 (Viotor).

Archilochus colubris. Ruby-throated Hummingbird.—Uncommon transient. May 11, 1910 to May 30, 1910; July 28, 1912 to September 23, 1917 (Viotor).

Tyrannus tyrannus. Kingbird.—Regular transient. May 2, 1916 to May 30, 1920; August 8, 1920 to September 4, 1908 (Viotor).

Myiarchus crinitus. Crested Flycatcher.—Summer resident. May 2, 1909 to October 2, 1912 (Viotor).

Sayornis phæbe. Phæbe.—Abundant transient. March 14, 1909 (Fleisher) to May 16, 1916 (Viotor); September 17, 1912 to November 8, 1914 (Viotor).

Nuttallornis borealis. Olive-sided Flycatcher.—Rare spring, uncommon fall transient. June 1, 1915 to June 12, 1908 (Viotor); August 24, 1908 (Fleisher) to September 16, 1917 (Viotor).

Myiochanes virens. Wood Pewee.—Common summer resident. May 5, 1925 (Walsh) to October 3, 1915 (Viotor).

Empidonax flaviventris. Yellow-bellied Flycatcher.—Common spring, uncommon fall transient. May 12, 1916 to June 7, 1910; September 6, 1914 to October 8, 1911 (Viotor).

Empidonax trailli alnorum. Alder Flycatcher.—One definite record. May 25, 1919 (Viotor).

Empidonax minimus. Least Flycatcher.—Common transient. April 28, 1908 (Fleisher) to June 1, 1909 (Viotor); August 21, 1921 to October 19, 1910 (Viotor).

Otocoris alpestris alpestris. Horned Lark.—Recorded by Dr. Braislin a number of years ago.

Cyanocitta c. cristata. Blue Jay.—Regular spring and fall transient; has summered occasionally. May 4, 1913 to June 3, 1917; September 11, 1910 to November 20, 1916 (Viotor).

Corvus b. brachyrhynchos. American Crow.—Permanent resident; uncommon during summer and winter months.

Corvus ossifragus. Fish Crow.—Summer resident; breeding in Quaker cemetery. February 7, 1915 to December 25, 1908 (Vietor).

Sturnus vulgaris. Starling.—Permanent resident. This species has decreased in numbers in the past ten years.

Molothrus a. ater. Cowbird.—Uncommon spring transient. I have found several eggs of this species in nests of other birds. April 11, 1909 to June 5, 1910 (Vietor).

Agelaius p. phæniceus. Red-winged Blackbird.—Uncommon spring, rare fall transient. Flocks occasionally seen passing over. March 18, 1917 to June 1, 1921; two fall records, both in August, 1914 (Vietor).

Sturnella m. magna. Meadowlark.—Rare visitant. March 15, 1913 (Vietor) and November 6, 1909 (Fleisher).

Icterus spurius. Orchard Oriole.—Uncommon spring transient. May 11, 1912 (Fleisher) to June 29, 1909 (Vietor).

Icterus galbula. Baltimore Oriole.—Abundant summer resident. April 28, 1910 (Vietor) to November 25, 1909 (Fleisher).

Euphagus carolinus. Rusty Blackbird.—Uncommon spring and fall transient. March 10, 1909 (Fleisher) to May 6, 1910 (Vietor); September 1, 1914 to November 22, 1914 (Vietor).

Quiscalus quiscula quiscula. Purple Grackle.—Formerly permanent resident; now absent in winter. Earliest spring arrival February 17, 1909 (L. F. Bowdish).

Passer domesticus. House Sparrow.—Permanent resident in the Park, although it can be said that it is less numerous than ten years ago.

Carpodacus p. purpureus. Purple Finch.—Uncommon transient; has wintered on several occasions. March 5, 1909 (Fleisher) to May 17, 1914; September 23, 1917 to December 20, 1911 (Vietor).

Loxia curvirostra minor. American Crossbill.—Irregular winter visitant. November 23, 1919 to March 14, 1909 (Fleisher) and April 22, 1923 (Allen).

Loxia leucoptera. White-winged Crossbill.—Three records. Winter of 1900 (Braislin); February 14, 1909 and March 5, 1909 (Vietor).

Acanthis linaria linaria. Redpoll.—Uncommon winter visitant. December 26, 1911 to March 21, 1920 (Vietor).

Astragalinus t. tristis. Goldfinch.—Regular spring and fall transient, wintering occasionally. March 10, 1909 to May 30, 1917; September 7, 1910 to December 30, 1915 (Vietor). Several midsummer records.

Spinus pinus. Pine Siskin.—Uncommon spring, common fall transient; several winter records. March 21, 1908 (Fleisher) to May 9, 1909 (Vietor); October 15, 1913 to December 30, 1908 (Vietor).

Poæcetes g. gramineus. Vesper Sparrow.—Two records. May 22, 1900 and October 20, 1912 (Vietor).

Passerculus sandwichensis savanna. Savannah Sparrow.—Uncommon spring, rare fall transient. April 20, 1925 (Walsh) to May 27, 1917 (Vietor); and October 26, 1918 (Allen).

Ammodramus savannarum australis. Grasshopper Sparrow.—Two records. May 4, 1918 (Allen) and May 19, 1913 (Vietor).

Zonotrichia l. leucophrys. White-crowned Sparrow.—Uncommon spring and fall transient. May 12, 1908 to May 20, 1917; October 16, 1912 to October 21, 1917 (Vieter).

Zonotrichia albicollis. White-throated Sparrow.—Common transient; wintered regularly to 1921. September 17, 1911 to May 30, 1917 (Vieter).

Spizella m. monticola. Tree Sparrow.—Uncommon winter visitant. November 11, 1917 to April 14, 1913 (Vieter).

Spizella p. passerina. Chipping Sparrow.—Abundant summer resident. April 1, 1908 (Fleisher) to December 2, 1917 (Vieter).

Spizella p. pusilla. Field Sparrow.—Common spring, uncommon fall transient. March 28, 1915 to May 18, 1916; October 11, 1916 to November 9, 1909 (Vieter). This species does not pass through the Park in spring as commonly as formerly.

Junco h. hyemalis. Slate-colored Junco.—Very abundant transient; winters commonly. September 20, 1915 to May 11, 1908 (Vieter).

Melospiza m. melodia. Song Sparrow.—Permanent resident; nests commonly throughout Park.

Melospiza l. lincolni. Lincoln's Sparrow.—Rare transient. April 30, 1916 (Vieter), September 27 (Fleisher) and 29 (Vieter), 1914.

Melospiza georgiana. Swamp Sparrow.—Uncommon transient. April 3, 1910 to May 18, 1917; October 20, 1909 to December 26, 1912 (Vieter).

Passerella i. iliaca. Fox Sparrow.—Common transient, wintering regularly. February 28, 1925 (Walsh) to April 12, 1914 (Vieter); October 11, 1908 to December 30, 1908 (Vieter).

Pipilo e. erythrophthalmus. Towhee.—Common transient. April 13, 1910 to May 27, 1917 (Vieter); August 28, 1912 to November 16, 1910 (Vieter). One winter record. January 10 to 17, 1912. Summered in 1909.

Cardinalis c. cardinalis. Cardinal.—Formerly nested (Braislin). Recent records as follows: March 26, 1902 (Braislin); April 11, 1902 (C. G. Abbot); May 2, 1914 (Fleisher) and May 7, 1914 (Vieter).

Zamelodia ludoviciana. Rose-breasted Grosbeak.—Common transient. May 7, 1916 to May 30, 1920; September 3, 1911 to October 14, 1908. Two midsummer records. July 24, 1910 and August 28, 1912 (Vieter).

Passerina cyanea. Indigo Bunting.—Regular spring transient. May 11, 1913 to May 22, 1917 (Vieter). No fall records. A favorite spot for these birds is the grassy meadow border just south of the Vale of Cashmere.

Piranga erythromelas. Scarlet Tanager.—Bred until 1912; now common transient. April 28, 1910 to June 3, 1917; August 2, 1909 to October 17, 1917 (Vieter).

Piranga rubra. Summer Tanager.—One record. May 13, 1913 (Vieter).

Progne s. subis. Purple Martin.—Rare transient. May 6, 1916 and May 13, 1914 (Vieter).

Petrochelidon l. lunifrons. Cliff Swallow.—Rare transient. May 25, 1918 (Allen) and May 27, 1919 (Vieter).

Hirundo erythrogastra. Barn Swallow.—Common transient. April 20, 1912 to June 5, 1921; July 24, 1921 to September 16, 1917 (Vieter).

Iridoprocne bicolor. Tree Swallow.—Common transient. April 16, 1917 to June 7, 1910; July 17, 1914 to October 17, 1917 (Viator).

Riparia riparia. Bank Swallow.—Formerly common, now uncommon spring transient. April 27, 1919 to May 20, 1913 (Viator). No fall records.

Stelgidopteryx serripennis. Rough-winged Swallow.—One record. May 1, 1916 (Fleisher). Absence of observations may be due to the difficulty of identification for many observers.

Bombycilla cedrorum. Cedar Waxwing.—Recorded every month except February and July. Common spring and abundant fall transient. March 6, 1921 to June 6, 1920; August 5, 1910 to December 12, 1915 (Viator).

Lanius borealis. Northern Shrike.—Irregular winter visitant. November 5, 1913 to April 14, 1918 (Viator).

Vireosylva olivacea. Red-eyed Vireo.—Common summer resident. May 6, 1915 to October 27, 1909 (Viator).

Vireosylva g. gilva. Warbling Vireo.—Common spring, uncommon fall transient. Bred prior to 1909. May 6, 1915 to June 9, 1912; September 21, 1920 to October 1, 1911 (Viator).

Lanivireo flavifrons. Yellow-throated Vireo.—Fairly regular summer resident until 1918; less regular since. April 25, 1920 to October 8, 1916 (Viator).

Lanivireo s. solitarius. Solitary Vireo.—Regular spring and fall transient. April 13, 1910 to May 24, 1917; September 26, 1920 to November 20, 1910 (Viator).

Vireo g. griseus. White-eyed Vireo.—Regular spring, rare fall transient. May 2, 1918 to June 5, 1909; September 17, 1911, September 19, 1909 and September 24, 1914 (Viator).

Mniotilta varia. Black and White Warbler.—Very abundant transient both spring and fall. April 23, 1909 to May 28, 1916; August 6, 1909 to October 24, 1919 (Viator).

Helmitheros vermivorus. Worm-eating Warbler.—Uncommon spring, rare fall transient. May 7, 1916 (Viator) to May 18, 1912 (C. Johnston); August 7, 1921 to August 22, 1915 (Viator).

Vermivora pinus. Blue-winged Warbler.—Uncommon spring, common fall transient. May 5, 1916 to May 18, 1920; July 28, 1910 to September 22, 1912 (Viator).

Vermivora chrysoptera. Golden-winged Warbler.—Rare spring and fall transient. April 29, 1923 (Walsh) to May 30, 1917 (Viator); September 3, 1911 and October 2, 1917 (Viator).

Vermivora pinus x *V. chrysoptera* or *V. leucobronchialis*. Brewster's Warbler.—Casual transient. May 7, 1916 (Fleisher), May 14, 1912 (Viator) and August 28, 1915 (Fleisher).

Vermivora r. rubricapilla. Nashville Warbler.—Common spring, uncommon fall transient. April 28, 1925 (Walsh) to May 24, 1917 (Viator); August 13, 1914 (Viator) and August 28, 1925 (Walsh) to October 4, 1914 (Viator). This species has been classed by Braislin in his "Birds of Long Island" as a rare spring transient.

Vermivora c. celata. Orange-crowned Warbler.—One record. May 20, 1918 (Allen).

Vermivora peregrina. Tennessee Warbler.—Rare spring, uncommon fall

transient. May 20 and 27, 1917 and May 26, 1916; August 16, 1914 to October 14, 1918 (Vietor).

Compsothlypis americana usneæ. Parula Warbler.—Abundant spring and fall transient. April 25, 1920 to June 16, 1918; August 2, 1912 to October 23, 1911 (Vietor).

Dendroica tigrina. Cape May Warbler.—Regular spring and fall transient, commoner now than formerly. May 2, 1914 (Fleisher) to May 30, 1917 (Vietor); September 6, 1914 to September 20, 1915 (Vietor).

Dendroica æ. æstiva. Yellow Warbler.—Common summer resident. April 27, 1910 to September 23, 1917 (Vietor).

Dendroica c. carulescens. Black-throated Blue Warbler.—Common transient. May 2, 1914 (Fleisher) to May 30, 1917 (Vietor); August 30, 1908 to October 27, 1909 (Vietor).

Dendroica coronata. Myrtle Warbler.—Very common spring and fall transient. April 3, 1921 to May 27, 1915 (Vietor); September 16, 1915 (Vietor) to November 29, 1924 (Walsh).

Dendroica magnolia. Magnolia Warbler.—Common spring and fall transient. May 2, 1915 to June 5, 1910; August 16, 1914 to October 23, 1911 (Vietor).

Dendroica cerulea. Cerulean Warbler.—A single bird was reported to me by Mr. George Chilton in the spring several years ago.

Dendroica pensylvanica. Chestnut-sided Warbler.—Common spring and fall transient. May 1, 1914 to May 30, 1915; August 13, 1914 to September 29, 1914 (Vietor).

Dendroica castanea. Bay-breasted Warbler.—Common spring and fall transient. April 28, 1910 to June 3, 1917; August 21, 1921 to September 26, 1913 (Vietor).

Dendroica striata. Blackpoll Warbler.—Common spring and fall transient. May 6, 1912 to July 1, 1917; August 21, 1921 to November 13, 1908 (Vietor).

Dendroica d. dominica. Yellow-throated Warbler.—Casual spring visitant. April 28, 1917 (Fleisher).

Dendroica fusca. Blackburnian Warbler.—Common spring transient, rarer in the fall. May 2, 1914 (Fleisher) to May 30, 1917 (Vietor); August 27, 1914 to October 4, 1914 (Vietor).

Dendroica virens. Black-throated Green Warbler.—Very common spring and fall transient. April 22, 1913 to June 1, 1915; August 28, 1912 to November 10, 1922 (Vietor).

Dendroica vigorsi. Pine Warbler.—Common spring, uncommon fall transient. March 27, 1921 to May 7, 1911; September 20, 1914 to October 19, 1913 (Vietor).

Dendroica palmarum palmarum. Palm Warbler.—Three fall records. September 4, 1921, October 9, 1921 and December 12, 1920 (Vietor).

Dendroica palmarum hypochrysea. Yellow Palm Warbler.—Common transient. April 6, 1913 to May 27, 1917 (Vietor); August 28, 1912 (Vietor) to November 20, 1908 (Fleisher).

Dendroica discolor. Prairie Warbler.—Common spring, uncommon fall transient. April 28, 1925 (Walsh) to May 24, 1914 (Vietor); August 8, 1908 to October 9, 1921 (Vietor).

Seiurus aurocapillus. Ovenbird.—Common spring and fall transient. April 27, 1908 to June 14, 1915; July 27, 1913 to November 23, 1913 (Viotor).

Seiurus n. noveboracensis. Northern Water-thrush.—Common spring and fall transient. April 15, 1910 to June 1, 1919; July 26, 1914 to October 18, 1908 (Viotor).

Seiurus motacilla. Louisiana Water-thrush.—Uncommon spring and fall transient. April 19, 1914 (Viotor) to June 2, 1908 (Fleisher); July 13, 1913 to October 4, 1914 (Viotor).

Oporornis formosus. Kentucky Warbler.—Exceedingly rare transient. One record. May 15, 1914 (Viotor).

Oporornis agilis. Connecticut Warbler.—Very rare spring and uncommon fall transient. May 18, 1913 (Viotor); September 7, 1908 to September 27, 1914 (Viotor).

Oporornis philadelphia. Mourning Warbler.—Rare spring and fall transient. May 9, 1916 (Walsh) to May 25, 1919 (Viotor); September 29, 1912 (Fleisher) and October 7, 1917 (Viotor).

Geothlypis t. trichas. Maryland Yellow-throat.—Very common spring and fall transient. April 13, 1917 to June 21, 1908; July 3, 1910 to November 1, 1914 (Viotor). Some of the dates seem to indicate the possibility of breeding, although there is no definite breeding record.

Icteria v. virens. Yellow-breasted Chat.—Casual in spring. May 21, 1916 (Viotor) and May 23, 1920 (Allen).

Wilsonia citrina. Hooded Warbler.—Uncommon spring, rare fall transient. May 5, 1915 to May 30, 1917; August 13, 1908 to September 13, 1908 (Viotor).

Wilsonia p. pusilla. Wilson's Warbler.—Common spring, uncommon fall transient. May 12, 1914 to June 6, 1915 (Viotor); August 27, 1908 (Fleisher) to November 25, 1914 (Viotor).

Wilsonia canadensis. Canadian Warbler.—Common transient. May 8, 1915 (Fleisher) to June 3, 1917 (Viotor); August 13, 1916 to September 26, 1909 (Viotor).

Setophaga ruticilla. Redstart.—Common spring and fall transient. May 6, 1920 to June 18, 1912; August 2, 1908 to November 23, 1919 (Viotor).

Mimus p. polyglottos. Mockingbird.—Casual in fall. September 24, 1913 (Viotor) and October 5, 1918 (Allen).

Dumetella carolinensis. Catbird.—Common summer resident. April 24, 1914 to November 12, 1922 (Viotor).

Toxostoma rufum. Brown Thrasher.—Common transient. An individual spent the winter of 1912-1913 and it has bred on at least one occasion. March 24, 1908 to May 31, 1909 (Viotor); August 2, 1908 (Viotor) to November 8, 1924 (Walsh).

Thryothorus l. ludovicianus. Carolina Wren.—Uncommon visitant, although it has been recorded every month of the year. An individual spent the winters of 1908-1909 and 1920-1921.

Troglodytes a. aedon. House Wren.—Common summer resident. April 21, 1916 to November 25, 1914 (Viotor).

Nannus h. hiemalis. Winter Wren.—Rare transient, occasionally wintering.

April 8, 1909 to May 5, 1917 (Fleisher); September 27, 1914 to December 11, 1912 (Viotor).

Telmatodytes p. palustris. Long-billed Marsh Wren.—A single individual seen by Mrs. Caroline Hartwell several years ago.

Certhia familiaris americana. Brown Creeper.—Common transient, wintering regularly. Does not arrive in numbers until October. September 17, 1913 to May 18, 1917 (Viotor).

Sitta c. carolinensis. White-breasted Nuthatch.—Has been recorded every month except June. There is a conspicuous movement from October on. Common fall and spring transient, wintering regularly. September 17, 1913 to May 11, 1917 (Viotor).

Sitta canadensis. Red-breasted Nuthatch.—The dates for this bird in Prospect Park are very erratic. It arrives generally from the middle to the end of September and has left by mid-November. It has wintered on at least two occasions. It can be classed as an uncommon fall and rare spring transient. There are also two summer records. August 28, 1912 (Viotor) to December 16 (Walsh) and December 20 (Viotor), 1916; March 8, 1911 to May 21, 1916 (Viotor).

Penthestes a. atricapillus. Black-cap Chickadee.—Has been recorded every month except June, but can be classed as an uncommon winter resident. September 25, 1921 to May 20, 1920 (Viotor).

Regulus s. satrapa. Golden-crowned Kinglet.—Common spring and fall transient, wintering rarely. March 19, 1908 to May 1, 1912; September 28, 1913 to January 22, 1909 (Viotor).

Regulus c. calendula. Ruby-crowned Kinglet.—Common spring and fall transient. March 31, 1912 to May 24, 1917; September 13, 1914 to December 24, 1922 (Viotor).

Poliottila c. cerulea. Blue-gray Gnatcatcher.—Rare spring and fall visitant. April 7, 1909 to April 29, 1920; and August 22, 1912 (Viotor).

Hylocichla mustelina. Wood Thrush.—Bred regularly until 1917. Now regular spring and fall transient. April 28, 1908 to May 24, 1918; September 22, 1917 to October 10, 1917 (Viotor).

Hylocichla f. fuscescens. Wilson's Thrush.—Common spring, now uncommon fall transient. April 28, 1908 to June 22, 1919; August 28, 1912 to October 11, 1916 (Viotor).

Hylocichla aliciae aliciae. Gray-cheeked Thrush.—Included in Dr. Murphy's list of Birds of Prospect Park. Observed in spring by Mr. Charles Johnston.

Hylocichla ustulata swainsoni. Olive-backed Thrush.—Common spring, less common fall transient. May 7, 1913 to June 5, 1910; September 8, 1914 to November 3, 1918 (Viotor).

Hylocichla guttata pallasi. Hermit Thrush.—Common transient; has wintered at times. March 26, 1925 (Walsh) to May 18, 1917 (Viotor); September 29, 1912 (Viotor) to December 30, 1923 (Walsh).

Planesticus m. migratorius. Robin.—Permanent resident. A few birds spend almost every winter in the Park. Average spring arrival date is March 7.

Sialia s. sialis. Bluebird.—Rare spring, uncommon fall transient. March 19, 1911 to April 24, 1908; October 7, 1909 to November 27, 1910 (Viotor).

Constitution and By-Laws of the Linnaean Society of New York, Adopted at Meeting of April 14, 1925; As Amended April 13, 1927

SECTION 1. General Organization.

Article 1. This Society shall be composed of persons, amateur or professional, interested in one or more branches of zoology, with particular reference to the New York City region.

Article 2. It shall consist of Resident, Life, Non-Resident, and Honorary Members and Fellows.

Article 3. Resident Members, Life Members and Fellows only shall be entitled to vote, to hold office, to serve on committees and Council and to transact business. Non-resident Members and Honorary Members may attend the meetings and take part in the scientific discussions of the Society.

Article 4. The officers of the Society shall be a President, a Vice-President, a Secretary and a Treasurer. (With the exception of the treasurer no officer shall hold the same office more than two consecutive years, but shall again be eligible for election one year after the expiration of such a term.) Such officers, together with nine members at large, shall form a committee for the management of the concerns of the Society, to be called the Council. Councilors shall serve for a term of three years, three to retire annually.

Article 5. By-laws for the more particular regulation of the Society shall from time to time be made.

Article 6. This Constitution may be altered or amended by a vote to that effect of three-fourths of the Resident Members, Life Members and Fellows present at any meeting of the Society; each Resident Member, Life Member and Fellow having been notified in writing at least thirty days previous to action on the proposed change.

SEC. 2. Of Members.

Article 1. Resident Members shall be persons living in New York City and vicinity who have shown interest for several years in one or more branches of zoology. Resident Members may become Life Members upon the payment to the Treasurer of Fifty Dollars, at one time, which shall be in lieu of annual dues.

Article 2. Non-Resident Members shall be similarly qualified persons, residing outside the New York City region, desirous of promoting the interests of the Society.

Honorary Members shall not exceed ten in number, and shall be persons eminent for their attainments in zoology.

Any Member may be elected a Fellow in recognition of distinguished service to the Society.

Article 3. All classes of Members shall be chosen by majority vote, after having been nominated at a preceding meeting and approved by the Council. Candidates for Resident Membership must be known personally to at least two members of the Council.

SEC. 3. Officers and Their Duties.

Article 1. The President shall preside at meetings of the Society and of the Council; shall preserve order; regulate debate; and conduct all business proceedings, strictly in accordance with parliamentary usage.

Article 2. The Vice-President shall perform the duties of President in the absence of the latter.

Article 3. The Secretary shall take and preserve correct minutes of the proceedings of the Society; shall have charge of its archives; shall give notice to persons of their election as members, and to committees of their appointment; shall call special meetings when directed by the President; and shall inform officers of all matters requiring their attention.

Article 4. The Treasurer shall collect all moneys due; shall pay all bills against the Society when approved by vote of the Council; shall keep a correct account of all receipts and expenditures and shall make a detailed report of the same at the Annual Meeting.

Article 5. Officers shall be nominated by the Council and chosen at the Annual Meeting, and a majority vote of the Resident and Life Members and Fellows present shall be sufficient for a choice. Any office which becomes vacant during the year shall be filled at the next meeting of the Society in the same manner.

SEC. 4. Of the Council and its Duties.

Article 1. The Council shall pass upon all nominations of candidates for membership, and shall make such recommendations as it sees fit on new business initiated by properly qualified members. Its recommendations shall be presented by the Secretary at the next meeting whenever possible. A majority vote of the members present shall be sufficient to ratify favorable recommendations.

Article 2. It may initiate any new business, promoting the general interests and welfare of the Society, and a majority vote of the members attending the meeting at which such new business is presented shall be sufficient for ratification.

Article 3. It shall act as a nominating committee for officers and shall hold a special meeting for this purpose prior to the annual meeting of the Society.

Article 4. It shall hold regular meetings for the transaction of general business. Special meetings may be called by the President or upon the request of any three Councilors.

Article 5. Councilors shall be chosen by ballot without nomination at the annual meeting and a three-quarter vote of the Resident Members, Life Members and Fellows present shall be sufficient for a choice. Vacancies caused by election to office or any other cause shall be filled at the next meeting of the Society in the same manner.

SEC. 5. Of Meetings.

Article 1. A meeting shall be held annually for the choice of officers and councilors and for other general purposes. At this meeting the Secretary shall present a report upon the publications, meetings, membership, etc.; the Treasurer upon the receipts and expenditures. Previous to the annual meeting the President shall appoint a committee of two members, neither of whom shall be a member of the Council, to audit the accounts of the Treasurer.

BY-LAWS

SECTION 1. Of Members.

Article 1. Every Resident Member shall be subject to annual dues of three dollars (\$3.00) and every Non-resident Member annual dues of One Dollar and a half (\$1.50), payable at the first regular meeting in March; but no dues shall be required of any member during two months succeeding his election. Any member absent on a scientific expedition during an entire year shall be excused from payment of dues for that year.

Article 2. Any member who shall neglect to pay his regular dues for one year, upon receiving due notification from the Treasurer, shall have his name erased from the roll of members.

Article 3. Any Resident or Non-resident Member may withdraw from the Society, by giving written notice of his intention and paying all arrearages due from him.

Article 4. Any undesirable member may be expelled from the Society upon recommendation of the Council by a three-fourths vote of the Resident and Life Members and Fellows present at any regular meeting, notice having been sent to each Resident Member, Life Member and Fellow, and to the person accused at least 30 days previously.

SEC. 2. Of Meetings.

Article 1. The annual meeting shall be held the second Tuesday in March.

Article 2. Regular meetings shall be held on the second and fourth Tuesdays of each month from May to October inclusive, except when suspended by a majority vote of the Society at a preceding meeting.

Article 3. Nine Resident Members, Life Members and Fellows shall form a quorum.

Article 4. The order of proceedings at meetings shall be as follows:

1. Reading of minutes of the previous meeting by the Secretary.
2. Reading of correspondence received by the Secretary.
3. Proposal of candidates for membership.
4. Election of members.
5. Business (a) Unfinished; (b) New.
6. Presentation of field notes.
7. Presentation of formal papers.
8. General discussion.
9. Adjournment.

SEC. 3. Of Changes of By-laws.

Article 1. The By-laws of the Society may be altered or amended by a three-fourths vote of the Resident Members, Life Members and Fellows present at any meeting, notice of the proposed change having been sent to each 30 days previously.

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ABSTRACT
OF THE PROCEEDINGS OF THE
LINNAEAN SOCIETY
OF
NEW YORK

For the Two Years Ending
March 27, 1928

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CONTAINING

**The Ornithological Year 1926 in the
New York City Region**

By Ludlow Griscom

**The Ornithological Year 1927 in the
New York City Region**

By Ludlow Griscom and Warren F. Eaton

**Birds of Union County, N. J., and Its Immediate
Vicinity—A Statistical Study**

By Charles A. Urner

Date of Issue, February 10, 1930

ABSTRACT

OF THE PROCEEDINGS OF THE

LINNÆAN SOCIETY

OF

NEW YORK

FOR THE TWO YEARS ENDING MARCH 27, 1928

Report of Secretary, 1926-1927

During the past year the Linnæan Society has had 16 regular and 4 informal summer meetings, at which the total attendance was 967. This number, even with the summer attendance deducted, is well in advance of the two preceding years, showing that interest in the Society is not declining.

The fourteenth annual dinner which was held at the Hotel Manhattan Square was attended by 52 members and guests and the annual meeting attracted 38 members and 26 guests.

At the remaining 15 regular meetings the attendance averaged 55.1, that of members 29.7, surpassing all previous years for regularity.

The summer meetings, of which one each was held for informal discussion during June, July, August and September, proved a successful experiment although attended on an average by only 19 persons. They served to add to the interest in summer study, bound the members more closely together and furnished pleasurable debates and notes.

The most populous meeting of the year was that of January 25, 1927, attended by 33 members and 55 guests, a total of 88, when the Society was addressed by Mr. Julius M. Johnson on "The Hawaiian Islands, as Regards Ornithology and Volcanic Activity." The smallest attendance was that of October 5, when only 22 were present.

Two of the regular meetings were devoted to discussion and field notes, as well as the four informal summer meetings; two were on Herpetology, two on Mammals, one on bird-banding, two largely on travel and the balance were primarily ornithological. Following the custom of the preceding year an effort was made to spend two evenings

in discussing field identifications of certain groups of birds to be seen locally. Members who have been afield with the various collecting expeditions, namely Messrs. Boulton, Griscom and Raven, favored the Society with illustrated lectures on these trips.

The Society lost by death Dr. C. W. B. Wheeler of 54 Park Ave., a resident member.

Nine new members were elected during the course of the year bringing the list, after dropping several through resignation or non-payment of dues, to

Resident members	114
Life members	3
Fellows	3
Honorary members	2
Corresponding members	23
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Total	145

The abstract of proceedings for the two years from March 25, 1924, to March 9, 1926, is now on the press, thanks to the energy of our last Secretary, Mr. Charles A. Urner. Included with these notes are three papers of local interest which have been excellently prepared. "The Birds of Prospect Park" by Mr. Lester L. Walsh; "The Birds of the Bronx Region" by Mr. John F. Kuerzi and a summary of Mr. E. P. Bicknell's Riverdale notes edited by Mr. Ludlow Griscom. It is to be the policy of the Society as adopted by the Council to encourage the publication of worthy local papers and to adopt a new method of recording the minutes to take effect commencing with the past year, so that there shall be an annotated list summarizing the data for each species, with an outline of the meetings of the Society appended. This plan it is felt will give our abstract more scientific value, will make it better reading and will enable the Society for the same expense to publish more material of general interest.

The Society has made great strides in the past year in its knowledge of local conditions. Through the cooperation of the members with the Secretary a vast amount of data on seasonal abundance of species in given type localities has been gathered and summarized. This carries on the work previously started and is a very worth while cause. Migration notes have been most detailed and the past year has been unusual for the occurrence of rare and casual species and for abundance of new records both early and late. The past fall for

example was a season of unprecedented abundance of the Goshawk and saw the largest flight of Snowy Owls in 40 years.

With a view to the protection of the hawks and owls, the Society appropriated \$50.00 on March 23, 1926, to help finance a circular prepared by Mr. Miller and others. In December the Secretary at the request of the Society sent a circular letter to the New York papers protesting against the wholesale slaughter of the Snowy Owl. It was published by at least four papers and several letters of approval of this stand were received by officers of the Society.

The Survey of breeding birds was undertaken again in two localities in Westchester County the week-end of June 12 and 13 and in the Wawayanda Region of North Jersey, June 19 and 20. Both trips were exceedingly complete and successful although it was found that owing to the lateness of the season a half dozen or so migrants were still present June 12 and 13. In addition, Mr. Charles A. Urner gave an illuminating paper on the "Birds of the Barnegat Region, New Jersey" on October 26, representing two weeks intensive observation in the summer.

The Council recommended as a means of facilitating the reporting of field-notes that sectional chairmen receive the data for report at each meeting. These chairmen were appointed by the President.

Under the generous will of the late Mr. Lewis B. Woodruff members have been enabled to purchase for their own use various books of his ornithological collection at half their estimated value. A number have availed themselves of this opportunity.

The Secretary wishes to thank particularly Messrs. Carter, Urner and Griscom for their cooperation during the past year.

WARREN F. EATON, *Secretary*.

Report of Secretary, 1927-1928

During the past year the Linnæan Society has held as usual 16 regular and during the summer 4 informal meetings, at which the total attendance was 1,057. This figure shows a gain over all preceding years, which may be owing to the more general nature of some of the talks, bringing an increase of visitors, but it at least shows a gratifying interest in the subjects presented before the Society.

The fifteenth annual dinner which was held at the Hotel Manhattan Square, was attended by only 38 members and guests, a smaller number than usual, due in part to various people being out of town at that particular time; the annual meeting afterwards attracted 33 members and 60 guests. At the remaining 15 regular meetings the attendance averaged 59.6, that of members 29.7 by coincidence the same as the year before.

The experiment of 1926 of having informal meetings in June, July, August and September was continued in 1927 and proved a success. It is suggested that these meetings might be improved by devoting each one to a particular region such as New Jersey, Westchester County, Long Island, etc., as an aid to local study.

The best attended meeting was that of February 7, 1928, when Mr. Howard H. Cleaves gave his illustrated lecture on "Cruising the Labrador" before 32 members and 106 guests, a total of 138. The smallest meeting was that of November 8, when only 26 were present.

Other formal papers were as follows:

Dr. F. R. Oastler, March 9, "Ascent of Mt. Rainer, its Birds, Flowers and Scenery."

Mr. H. H. Cleaves, March 29, "On the Long's Peak Trail."

Mr. Alden H. Hadley, May 24, "Birds and Conservation."

Mr. Ludlow Griscom, October 25, "An Ornithological Visit to Panama."

Mr. Julian K. Potter, November 22, "Present Day Ornithology."

Mr. Frank B. Levy, December 13, "The Training of a Falcon."

Dr. Frank R. Oastler, December 27, "Alaska—Flora and Fauna."

Mr. M. S. Crosby, January 24, "Birds of Dutchess County."

Dr. C. W. Townsend, February 28, "Ipswich Sand Dunes and Salt Marshes."

In addition beside the four summer evenings, two meetings were devoted to field notes on migration and distribution and one to bird banding. As before, informal lectures and discussions were held on

the identification and distribution of certain groups, that on the fresh water ducks being led by Mr. Griscom and that on the sparrows by Mr. J. T. Nichols.

Dr. William M. Patterson spoke on the interpretation of bird song and expounded his idea of studying bird speech.

It was with the purpose of associating more closely with our neighbor clubs, the D. V. O. C. and the N. O. C., that Mr. Potter and Dr. Townsend were induced to speak before the Society. It is to be hoped that such good relations as now exist will continue.

Unfortunately the Society lost by death on February 10 one of its founders, Mr. H. B. Bailey. By referring to the list of members in the abstract published May, 1927, it will be seen that the names of Messrs. Fox, Warren and Williston are included. Unfortunately we have since been notified of their deaths.

During the course of the year twelve new members were elected, and the class of corresponding members was changed to non-resident honorary members. At the meeting of February 28, 1928, it was voted to elect all the Founders of the Society now living to the rank of fellows, making the list to-day,

Resident members	129
Life members	3
Fellows	8
Honorary members	2
Non-resident honorary members.....	18
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Total	160

The abstract of proceedings for 1925-1926, numbers 37 and 38, was published May 15, 1927, as expected. The Secretary is at present working on the Summary of the years 1927-1928 and has at hand an excellent paper, "The Birds of Union County," by Mr. Charles A. Urner to be published with the abstract. It is to be hoped that printing can be accomplished this year and that other interesting papers will be contributed. It is a matter of regret that Mr. Ludlow Griscom, who has done so much for local work and for the Society has "migrated" to Cambridge.

During the last year we have tried to aid in the work of the Biological Survey in taking monthly duck censuses and Mr. Urner with his trips to Barnegat has furnished a good proof of the interesting results which can be attained. So far as possible the Society has

worked against shooting not only of protected birds but of Hawks and Owls. It was voted to contribute to the Ridgeway Memorial Fund a sum of \$100.00 and an effort has been made to work with the Bird-banding Association and the Audubon Societies. The Secretary received a large number of pamphlets on Hawk Protection from the National Association of Audubon Societies which are being distributed.

The new organization provided by the Constitution has proved effective in facilitating business through the Council and has made possible periodical meetings of this body to discuss the aims of the Society and the various problems which arise. The Secretary hopes that the work which has been done for the last three years in plotting the maximum number of individuals of each species seen each season in a given section can be continued at least two years more. The results thus obtained depend largely on the individual members turning in their lists to the recording parties. During June the field trips were continued and gratifying results were obtained both on northern Long Island and in New Jersey. The proposed census in Putnam County was not taken but can be done this year.

In closing it might be said that the Secretary received a letter during the past year from one of our oldest and most respected members to the effect that the Society runs a risk of falling between the Scylla of being too amateurish in its study of ornithology and the Charybdis of becoming an exclusive organization without any vigor. I am sure it is the feeling of most of us, however, that the Society is working toward the goal of becoming more and more scientific but at the same time of exercising an influence on an ever widening circle in the interests of bird protection and general knowledge among the unprofessional. In resigning after two years as Secretary I wish to thank the members for their cooperation and especially Messrs. Griscom, Urner, Carter and Dr. Chapin for their assistance.

WARREN F. EATON, *Secretary*.

The Ornithological Year 1926 in the New York City Region

BY LUDLOW GRISCOM

For some time it has been planned to issue a yearly report on the bird life of the New York City Region, to be published in connection with the Abstract of Proceedings of this Society. The great increase in active members has naturally resulted not only in a great increase in records, but also in the more thorough investigation annually of a greater section of the local territory. The "field reports by members" now sometimes occupy an entire evening, and in the year 1926 special meetings were held throughout the summer, as the best means of obtaining and preserving the mass of data, which could not possibly have been presented at the first regular session of the Society in October. We have adopted, therefore, the excellent plan of our neighbor, the Delaware Valley Ornithological Club, and combine all the records of interest in the annotated list of species in A. O. U. Check List order which follows. This renders them far more easily available for reference, than if scattered through the minutes of the various meetings, as formerly. For the sake of completeness, all available sources of information have been used, in addition to the records supplied by members of this Society. The season reports in Bird-Lore have been of great assistance in this connection, and contain interesting items by students not affiliated with the Linnæan Society. The American Museum of Natural History annually acquires specimens of local interest from other independent sources. Mr. Roy Latham of Orient, Long Island, has once more kindly furnished the Society with his observations. The writer is greatly indebted to the Secretary, Mr. Eaton, for invaluable assistance in card-indexing the records in the minutes, and to Mrs. Griscom for similar statistical work, and typing.

The year 1926 was ornithologically the most notable one in many respects in the chronicles of the Linnæan Society. Never before have so great a number of the rare and casual species been reported in one year. The spring migration of land-birds was unusually heavy, the more uncommon transients were present in unusual numbers, and every species of Warbler ever recorded in this Region was noted. The spring flight of ducks nearly equalled the best previous record (1925). The fall migration of shore-birds was unusually good and most of the rarer species were observed. There was a spring and summer

flight of various southern stragglers, Herons and Shearwaters. The flight of Jaegers was the greatest on record. In the late fall and early winter, visitations of certain arctic and northern species broke all records, such as the Goshawk and Snowy Owl, while Snowflakes, Longspurs, Shrikes, the *Alcidae*, and the white-winged Gulls were unusually numerous. If we eliminate the 66 accidental visitants from consideration, 311 species are a theoretical possibility in this region annually. No less than 281 of these were recorded during the past year. At least half a dozen observers saw over 225 species each in the course of their field work in the Region. Mr. Frank E. Watson and Mr. J. Kuerzi each saw 251 species without special effort to "get a list," and the writer observed 239 species in only 7 months field work. These figures are given, not because there is any special merit in making a large list of species, but because they furnish a reliable index of the unusual abundance of bird life. If they be compared with results obtained by active observers fifteen to twenty years ago, they furnish an even more striking index of the increase in birds locally during that period. In 1909 I made over 200 field trips in this region and recorded 209 species, a record unbroken for many years. The chief reason why an observer today can see 225 species in half as many field trips is that 48 species of Gulls, Terns, Ducks, Herons, Shorebirds and Warblers are now of regular occurrence, and anybody can certainly see the majority of these in one year. In 1909 only fifteen of these were recorded, and I naturally did not see them all.

The month of *January* was perhaps a little milder than usual with a week's thaw after the middle of the month. There were perhaps the usual number of winter casuals, and almost none of the rarer northern visitors, a notable exception being the Arctic Three-toed Woodpecker, which now occurs almost every year in the Region. The chief event of the month was the phenomenal flight of Robins after the thaw in numerous sections, especially marked on January 24. This flight has been analyzed in detail by Mr. J. T. Nichols in *Bird-Lore*, and his data need not be repeated here. I accept his conclusions that some at least of these Robins were north-bound, and a southward movement was actually observed in early *February* with the advent of cold and snow.

There was no severe weather after mid-February, but the first half of *March* was abnormally cold. The commencement of spring was greatly delayed, and all the earlier migrants were very late in

attaining normal numbers. At Englewood, Red-wings did not become common until March 21, while the arrival of the breeding Flickers and Robins was not completed until the unprecedented date of April 11. In this summary I eliminate from consideration the records of casually early stragglers. Such records increase annually, as the number of observers increases, and if accepted too literally would turn a generally late spring into an apparently early one. As the first half of April was also abnormally cold, there was absolutely no wave of the first group of April migrants, and they did not become common or generally distributed until April 22. During this entire period the only compensation for local students was the relative abundance of the fresh water ducks and the presence of other marsh birds, which like the Bittern, Virginia Rail and Greater Yellow-legs, did not reflect the general lateness of the season. Many winter visitants remained exceptionally late.

April 22. First real flight of the season, after two very warm days. Continued migration the next day. By Sunday, April 25, this flight had passed on, leaving the countryside markedly deficient in bird-life, though fresh-water ducks were present in greater numbers and variety than ever before so late.

April 26-29. Another period of abnormally cold or chilly weather, migration almost suspended. An astonishing peculiarity, however, was the arrival of the Gnatcatcher in Central Park on April 26, and the Prothonotary and Yellow-throated Warblers on April 29.

April 30. Another flight, bringing individuals of most of the late April group. The Chewink and Thrasher arrive in numbers for the first time.

May 1-12. This period of the month produced a most anomalous migration. Only two nights were really warm, at least four were notably cool. There was not a single "wave" or flight of marked proportions during the entire period. The great majority of the species of Groups I and II were reported, but not a single one was common or generally distributed at its close. Their erratic arrival was equally remarkable. On Sunday, May 2, at Englewood (Griscom), the Least Flycatcher, Meadowlark, Vesper, Chipping, Field and Swamp Sparrows, Chewink, and Black and White Warbler reached normal numbers for the first time, while the Thrasher was distinctly scarce. One individual each of half a dozen Group I

species was noted. Pangburn in Westchester County, found none of these, but recorded eight others. Miller at Plainfield and Carter at Boonton, reported still other groupings. In Central Park, individuals of various Group II species arrived before many Group I species, in some cases establishing early records. The outstandingly late species were the Scarlet Tanager and Baltimore Oriole. The Blackburnian Warbler was the only species far more numerous than usual, and the number of Gnatcatchers broke all previous records. Crosby's census of 109 species in northern Dutchess County on May 9, reflected conditions perfectly—almost all the possible species present, and almost all very scarce in individuals. The relatively large list was due to (1) 9 species of ducks (unprecedented so late) and (2) his perfect knowledge of just where to look for the advance guard of the more recent arrivals.

May 13. By all odds the best flight of the year to date, but not of real "wave" proportions. The Rose-breasted Grosbeak suddenly arrived in numbers, and the Orange-crowned Warbler was found in Central Park (Griscom) and in the Bronx (Kuerzi).

May 15. Big "wave" throughout the Region, combining Groups I-II-III in numbers. Pangburn in Westchester County, obtained 119 species alone (the record), and noted 27 species of Warblers (only 1 less than the record), including an Orange-crowned. One party in the Bronx Region noted 112 species, an unequalled feat in a territory so largely metropolitan in character.

May 18. Another big wave, combining Groups III and IV. The Cuckoos, Nighthawk and Wood Pewee in numbers for the first time. The White-crowned and Lincoln's Sparrows in unprecedented numbers. The Magnolia and Canadian Warblers, the Northern Yellowthroat and the Thrushes in great abundance.

May 19-31. The balance of the month was relatively cool, with northwest winds a considerable number of nights. Migration erratic, and relatively slight. Very late dates were obtained for numerous April transients, and the Brown Creeper was found nesting casually in Van Cortlandt Park, May 27 (Cruikshank). On the same day this enterprising observer discovered a singing male Cerulean Warbler and a pair of Kentucky Warblers at Grassy Sprain. The Shore-bird and Tern migration on the coast was notably poor.

June. On June 1, the Blackpoll Warbler became common for the first time, and there were marked flights on the 2nd and 3rd, char-

acterized by the abundance of the Red-eyed Vireo and Redstart. In Westchester County numerous transients were noted on June 11, 12, and 13. On these three days various parties of the Linnæan Society undertook a cooperative census of Westchester County, covering almost its entire area, and adding notably to our knowledge of the bird life of the more rural northern half. The next week a similar census was made in the Wawayanda Plateau region of northern New Jersey, and over 100 species were observed, including many characteristic of the Canadian Zone. Another notable event was the rediscovery by Watson of the breeding of the Kentucky Warbler at Worthington, Westchester County. The Least Tern was found breeding definitely at Long Beach by several observers independently, the first record for Long Island since 1882.

July. The month was uneventful. A relatively small flight of southern herons began about July 25. There was an unusually large flight of Curlew on the coast.

In *August* and *September* the scene of chief interest shifts to the coast. The Shorebird migration was fairly good. Early in the month there were more Knots than usual. The Caspian Tern was reported four times, 20 individuals in all, exceeding the combined records of the past thirty years. The Parasitic Jaeger was common off-shore the entire fall. The Golden Plover was even more numerous than last year, and is undoubtedly increasing, an interesting case of a fast vanishing species apparently saved at the eleventh hour. Dyker Heights Park was again worked by numerous enthusiasts. This little oasis in South Brooklyn has proved to be a veritable bird-trap, and is the "Fair Isle" of this Region. The season's "catch" included the Arctic Tern, Sabine's Gull, Yellow and Little Black Rails, Buff-breasted Sandpiper, and Say's Phoebe. The land-bird migration inland was unusually poor and monotonous. The very late spring combined with a hot muggy summer resulted in a very late start. The Yellow-bellied Flycatcher, for instance, did not appear in Central Park until August 31, whereas it is almost invariably present there by August 15.

During the entire month of September and the first half of *October* there were no sharp frosts or oscillations of temperature, and summer slipped away by imperceptible degrees. So did the birds, both species and individuals. Many observers report not a single interesting day, when birds were really numerous in species. Many very

late dates were made in consequence, the number of lingering Shore-birds being particularly noteworthy.

The season changed rapidly in *November*, and *December* was abnormally cold and snowy. The early arrival of the Snowflake and Longspur heralded the great flights of Arctic birds which arrived during the last two months of the year. The Snowy Owl first appeared on November 4, and reached its maximum numbers the end of the month. Goshawks poured into northwestern New Jersey and eastern Long Island the end of October and early November, but did not become generally distributed until late in December. Shrikes first appeared the middle of November, and became positively abundant along the coast two weeks later. By the first week in December Glaucous, Iceland, and Black-backed Gulls were arriving in unusual numbers, colliding with the rear guard of the Jaegers and Laughing Gulls. Close on their heels came *Alcidæ* of several species, and inland Long-eared and Saw-whet Owls were distinctly on the move the first week in the month. So many northern visitors and so many late stragglers combined to make Christmas the most exciting ever known in this Region. Every census made locally was notable in one way or another, but space is lacking to mention them all. With every unusual bird marked down to a question of yards by weeks of intensive field work in advance, the Bronx County Bird Club, working in 5 parties, on December 26, rolled up the almost incredible list of 83 species in the Bronx Region. This list included, of course, the rarer Gulls, Goshawks, Snowy Owls, Arctic Three-toed Woodpecker, Pine Siskin and Northern Shrike. It also included numerous ducks driven into the Sound by severe weather for shelter. On the other hand it included a long list of Blackbirds, Sparrows, and other late fall migrants like the Kingfisher, Dove, and Winter Wren, which frequently linger until Christmas in years when the early part of the fall has been very mild. The best measure, however, of thorough preparation for this census was the list of 6 species of Owls, represented by nineteen individuals. No one can find so many Owls in one day in this Region by happy accident. Mr. F. E. Watson closed a remarkable year dramatically enough on December 31 at Long Beach, by discovering a Razor-billed Auk sitting in the sand. Mutual recognition took place at a distance of fifty yards. The Auk won the ensuing sprint with about two feet to spare. This type of winter sport is so nearly unique in this Region that it deserves permanent record.

1926 RECORDS

Colymbus holboelli. Holboell's Grebe.—Overpeck Creek, Englewood region, N. J., March 21 (Baker, Griscom and Janvrin), March 27 (Eaton), April 3 (Eaton, Griscom, Hickey and Kuerzi); Pelham Bay, April 7 (Kuerzi); at least twenty at Montauk, L. I., Dec. 27 (Baker, Boulton, Crosby and Griscom).

Colymbus auritus. Horned Grebe.—Englewood region, N. J., Dec. 27 (Edw. G. Nichols).

Podilymbus podiceps. Pied-billed Grebe.—Noted May 22 on Little Swartswood Lake, Sussex County, N. J. (Carter, Griscom and Howland); one pair on Wanda Lake, Sussex County, N. J. (Linnæan Society census, June 19); bred on Wampus Pond, Westchester County, N. Y. (Coles); Dyker Heights, Brooklyn, Nov. 17 (C. Johnston).

Gavia immer. Loon.—Boonton Reservoir, N. J., May 22 (Carter).

Gavia stellata. Red-throated Loon.—Unusually common during the fall; noted in Eastchester Bay on the Sound, Oct. 11 (Kuerzi) and Oct. 14 at Dyker Heights (C. Johnston).

Alca torda. Razor-billed Auk.—One found dead and partly decomposed at Long Beach, May 23 (Nathan); two seen from the Jersey City ferry, Dec. 5 (Urner).

Uria lomvia. Brunnich's Murre.—Greenport, L. I., Dec. 3, 1 shot by C. L. Fournier; Bayshore, L. I., Dec. 4, 1 shot by Edwin Thorne; Belmar, N. J., 1 in the surf, Dec. 12 (Watson); Dec. 20-22, off Brighton Beach (Wm. H. Wiegmann); Long Beach, Dec. 19 (Carter and J. M. Johnson); Bayshore, L. I., 1 shot by a Capt. Harrison between Dec. 26-31 and presented to American Museum of Natural History by W. Huntling Powell.

Alle alle. Dovekie.—Long Beach, 1 found dead Dec. 1 (Quattlebaum).

Stercorarius pomarinus. Pomarine Jaeger.—1 at Long Beach, Nov. 2 (Griscom).

Stercorarius parasiticus. Parasitic Jaeger.—Great flight all along the coast up to December. First noted Aug. 8 at Long Beach (Matuszewski); reported also at Jones Beach, Dyker Heights and Oakwood Beach, Staten Island.

Rissa tridactyla. Kittiwake.—Manhattan Beach, Feb. 27 (Hickey); Montauk Point, 1 on Aug. 14 (Baker).

Larus hyperboreus. Glaucous Gull.—Noted in the Sound at Hunt's Point, Jan. 15 (Cruickshank); Clason Point, Jan. 9 (Kuerzi); Pelham Bay Park, Feb. 16, and again in the Bronx region, Dec. 26; noted in New York Harbor, Feb. 7 (Eaton); Elizabeth, March 13 (Urner); Oakwood Beach, Staten Island, in mid-summer (Matuszewski); Jones Beach, May 29 and 30 (Eaton and Griscom); Long Beach, Nov. 21 (Watson); Montauk, Dec. 27 (Baker and Griscom).

Larus leucopterus. Iceland Gull.—Bronx region, Jan. 10 (Herbert, Kassoy and Kuerzi), April 1 (Kuerzi), May 15 (Bronx County Bird Club) and Dec. 26; Hudson River, March 4 (Cruickshank) and April 25 (Baker, Eaton and Griscom); Staten Island, Feb. 7 (Eaton) and April 18 (Kuerzi); Long Beach, Feb. 12

(Kuerzi and others) and Dec. 5 (Baker, Eliot and Griscom); Montauk, Dec. 27 (Baker and Griscom); Elizabeth, N. J., March 13 (Urner).

Larus atricilla. Laughing Gull.—A winter straggler at Belmar, N. J., Jan. 8 (Thurston); now a regular spring visitor to the Sound, where it is commoner than on the South Shore of Long Island, first noted April 24 (Kuerzi); now abundant throughout the region all fall, noted regularly on the Central Park Reservoirs as late as Oct. 30 (Cruickshank) and seen from the Staten Island ferry, Nov. 21 (Cleaves).

Xema sabini. Sabine's Gull.—One immature at Dyker Heights, Oct. 14 (C. Johnston and Watson).

Sterna caspia. Caspian Tern.—14 at Jones Beach, Aug. 16 (R. Friedmann) and 3 on Sept. 4 (Griscom); 2 at Oak Island Beach, Sept. 12 (C. Johnston) and 1 the same day at Long Beach (Cruickshank).

Sterna paradisæa. Arctic Tern.—Excellent seen with Common Terns at Dyker Heights, Aug. 21 and Sept. 5 (C. Johnston) to Sept. 18 (Eaton).

Sterna hirundo. Common Tern.—Unusually scarce during the spring, noted in the Sound as late as June 11 (R. R. Coles); seen on the Hudson River off Piermont, Aug. 8 (C. Johnston); observed in Central Park, Sept. 15 (Griscom); at Dyker Heights, Nov. 7 (Hix).

Sterna dougalli. Roseate Tern.—Noted Aug. 21 and Sept. 5 at Dyker Heights (C. Johnston).

Sterna antillarum. Least Tern.—First noted at Long Beach, May 23, and four pairs bred on the flats just east of the golf links, where young were found Aug. 1 (Rogers and Hix); also noticed on migration at Oak Island Beach, Aug. 28, and on the Sound at Northport, Aug. 27 (Mrs. Fry), a most unusual record.

Hydrochelidon nigra surinamensis. Black Tern.—One adult on Peach Lake, Westchester County, N. Y., Aug. 7 (Griscom).

Rynchops nigra. Black Skimmer.—One at Echo Bay, New Rochelle, July 17 (Mrs. E. Rich); 2 off Jones Inlet, L. I., May 22 (R. C. Whitman).

Puffinus borealis. Cory's Shearwater.—Two off Jones Beach, Aug. 16 (R. Friedmann); one partly disabled at Montauk Point, Nov. 21 (Cruickshank).

Puffinus gravis. Greater Shearwater.—Off Jones Beach, Aug. 16 (R. Friedmann).

Sula bassana. Gannet.—Two noted off Jones Beach, May 30 (Eaton and Friedmann).

Phalacrocorax carbo. Common Cormorant.—One immature with white abdomen and belly with the smaller species at Jones Beach, May 29 (Griscom).

Phalacrocorax auritus. Double-crested Cormorant.—Seen in the Sound off Hunters Island, April 25 (Kuerzi); 2 on the Hudson at Croton Point, July 12 (C. Johnston).

Mergus americanus. American Merganser.—Noted May 23 at Culver's Lake, Sussex County, N. J. (Carter, Griscom and Howland).

Mergus serrator. Red-breasted Merganser.—Casual on the Hudson at Pier-

mont, June 25 and Aug. 8 (C. Johnston); a pair on Overpeck Creek, April 25 (Kassoy).

Lophodytes cucullatus. Hooded Merganser.—Montauk, Dec. 27 (Griscom and others); Pelham Bay Park, Feb. 16 (L. N. Nichols); Jerome Reservoir, March 28, Nov. 5 and 6 (Cruickshank); Kensico Reservoir, 2 on April 6 (Kuerzi); Lake Wampus, 15 on Nov. 7 (Kuerzi); Overpeck Creek, N. J., 2 on March 27 (Eaton), a pair on April 11 (Hix); South River, March 14 (W. H. Wiegmann); Boonton, May 16 (Carter); Culvers Lake, Sussex County, Nov. 14 (Griscom).

Anas platyrhynchos. Mallard.—Van Cortlandt Park, 45 on Feb. 13 (Cruickshank); Overpeck Creek, N. J., on May 2 (Bronx County Bird Club); Boonton, May 9 (Carter); Jones Beach, 5 on Sept. 4 (Griscom); Croton Lake census, 2 June 13.

Anas rubripes. Black Duck.—Found breeding at Larchmont and Kensico Lake (Coles); 2 pairs noted in Westchester County on June 13 (Kessler and Kuerzi); 8 young on Wanda Lake, June 19 (Eaton).

Chaulelasmus streperus. Gadwall.—Rye Lake, Jan. 17 (R. R. Coles).

Mareca americana. Baldpate.—Scarcer than usual spring of 1926. Jones Beach, L. I., 3 on Sept. 4 (Griscom); Montauk, 100 on Dec. 17 (Baker, Boulton, Crosby and Griscom).

Nettion carolinense. Green-winged Teal.—Jones Beach, L. I., 3 on Sept. 4 (Griscom); Lake Agassiz, Bronx Park, a female has wintered the last two seasons; Van Cortlandt Park, March 20 (Cruickshank); Overpeck Creek, N. J., common from March 21 to May 2 (Kassoy).

Querquedula discors. Blue-winged Teal.—Jones Beach, May 30 (Eaton and Friedmann), 10 on Sept. 4 (Griscom); Bronx region, April 25 (Cruickshank); Hudson River, Nov. 14 (Cruickshank); South River, 1 male March 28 and April 4 (Miller); Overpeck Creek, pair April 25 (Baker, Eaton and Griscom).

Spatula clypeata. Shoveller.—Elizabeth, N. J., April 10 (Urner); Overpeck Creek, N. J., April 17 (Cruickshank).

Dafila acuta. Pintail.—Quogue, 2 on May 23 (Watson and Lewis); Over-

Aix sponsa. Wood Duck.—Van Cortlandt Park, Feb. 13 and 4 on March 20 peck Creek, N. J., May 2 (Kassoy); Jones Beach, 10 on Sept. 4 (Griscom). (Cruickshank); Elizabeth, N. J., Feb. 27 (Urner); Rivervale, March 28 (E. Eliot); Boonton, March 28 (Carter); Newton, N. J., on May 23 (Griscom, Carter and Howland); South Westchester, 1 pair on June 13 (Cruickshank); Upper Larchmont Swamp, found breeding (Coles).

Marila americana. Redhead.—Hunts Point, Feb. 2 (Cruickshank); Overpeck Creek, N. J., 1 female on April 3 (Griscom and Eaton).

Marila valisineria. Canvasback.—Overpeck Creek, N. J., 1 female on April 3 (Griscom) and on April 11 (Hickey); Dyker Heights, Brooklyn, on Oct. 14 (C. Johnston).

Marila marila. Greater Scaup.—Jones Beach, 1 male in eclipse plumage on Sept. 4 (Griscom).

Marila collaris. Ring-necked Duck.—Kensico Reservoir, 3 on April 6 (Kuerzi); Overpeck Creek, N. J., 1 female on March 28 (Griscom and Eliot), a pair on March 29 (C. Johnston), 2 males and 1 female on April 3 (Griscom, Eaton, Kuerzi and Hickey), 1 male on April 9 (Griscom and C. Johnston), 2 males and 1 female on April 11 (Baker, Griscom, Kuerzi, et al.).

Clangula clangula americana. Golden-eye.—Overpeck Creek, N. J., 2 males and 1 female on March 28 (Griscom and C. Johnston), on April 3 and 9 (Griscom and C. Johnston), April 25 (Kassoy); Eastchester Bay, April 25 (Kuerzi); Greenwood Lake, N. J., one on June 19 (Hickey and Urner); Dyker Heights, Oct. 24 (Nathan).

Charitonetta albeola. Bufflehead.—Hudson River, March 21 (Cruickshank); Oakwood Beach, April 17 (Kuerzi); Culvers Lake, 3 on Nov. 14 (Griscom).

Harelda hyemalis. Old-squaw.—Pelham Bay Park, 8 on Jan. 16 (Cruickshank); Eastchester Bay, April 25 (Kuerzi); Dyker Heights, Brooklyn, Oct. 17 (Nathan).

Oidemia americana. American Scoter.—Hudson River, 2 on Jan. 27 (Cruickshank).

Oidemia deglandi. White-winged Scoter.—Rye Beach, June 11 (Coles).

Erismatura jamaicensis. Ruddy Duck.—Overpeck Creek, N. J., April 9 (Griscom), April 10 (Kessler), April 17 (Cruickshank), April 25 (Kassoy); Bronx, May 15 (Kassoy and Kuerzi).

Branta canadensis. Canada Goose.—Southampton, L. I., 5 on May 30 (Watson and Lewis).

Branta bernicla glaucogastra. Brant.—Pelham Bay Park, 27 on Jan. 16 (Cruickshank); Fort Schuyler, 24 on Feb. 22 (Kuerzi, et al.); Long Beach, 30 on Feb. 20 (C. Johnston); Jones Beach, May 29 (Griscom); Southampton, on May 30 (Watson and Lewis); Hudson River, 4 seen on Nov. 14 (Cruickshank).

Branta leucopsis. Barnacle Goose.—Overpeck Creek, N. J. First seen March 20 (Hix), seen by twenty or more observers on the 21st and collected the next day by J. A. Weber. While perfectly able to fly, it was suspiciously tame and had perhaps escaped from some aviary.

Chen hyperboreus nivalis. Snow Goose.—Oakwood Beach, 1 immature on April 17 (Kuerzi).

Botaurus lentiginosus. Bittern.—Plainfield, N. J., April 4 (Miller); Central Park, April 23 (Griscom and Eliot), Sept 23 (C. Johnston); Bronx, Dec. 26 (Bronx County Bird Club).

Ixobrychus exilis. Least Bittern.—Dyker Heights, Brooklyn, April 27 (C. Johnston); Van Cortlandt Park, found breeding to Sept. 25 (Kuerzi).

Ardea herodias herodias. Great Blue Heron.—Elizabeth, N. J., Jan. 17 (Urner); Pelham Park, 2 on Jan. 23 (Kuerzi); Boonton, May 22 (Carter); Wawayanda census, 3 seen on June 19.

Herodias egretta. American Egret.—Dyker Heights, Brooklyn, Sept. 17 (Nathan); Mastic, Aug. 17 (W. S. Dana); Harrington Park, Bergen County,

N. J., 6 birds from the end of July on (R. C. Baldwin), 2 seen there Aug. 6 (F. M. Chapman); Overpeck Creek, N. J., 2 on Aug. 29 (Kassoy).

Florida caerulea. Little Blue Heron.—Mastic, 1 adult on April 3 (J. T. Nichols); Rivervale, on July 25, Aug. 1, Sept. 11, several (Dr. Eliot); Harrington Park, Bergen County, N. J., 4 seen the end of July (R. C. Baldwin), 1 on Aug. 6 (F. M. Chapman); Montauk, Aug. 14 (Baker); Jones Beach, Sept. 4 (Griscom).

Butorides virescens. Green Heron.—Mastic, April 11 (J. T. Nichols).

Nycticorax nycticorax naevius. Black-crowned Night Heron.—Seven nests found Larchmont Lake (Coles); six wintered at Elizabeth, N. J. (Urner); 36 on Dec. 27 at Babylon (John T. Tompkins).

Nyctanassa violacea. Yellow-crowned Night Heron.—Central Park, 1 adult on April 23, seen by at least fifty observers.

Rallus elegans. King Rail.—Hunts Points, found dead, but fresh, Feb. 1 (Kuerzi); Jerome Swamp, Dec. 26 (Bronx County Bird Club).

Rallus crepitans. Clapper Rail.—Lawrence, L. I., Jan. 10 (H. F. Stone).

Rallus virginianus. Virginia Rail.—Bronx, April 3 (Bronx County Bird Club); Overpeck Creek, N. J., April 11 (Kuerzi, et al.); Speonk, Dec. 23 (LeRoy Wilcox).

Porzana carolina. Sora.—Van Cortlandt Park, April 18 (Cruickshank); Jerome Swamp, Dec. 26 (Cruickshank and Ruff).

Coturnicops noveboracensis. Yellow Rail.—Dyker Heights, Brooklyn, Oct. 1 (Johnston and Watson); Quogue, Oct. 3 (Watson).

Crex cacus. Little Black Rail.—Dyker Heights, Brooklyn, Oct. 14 (C. Johnston and Watson).

Gallinula galeata. Florida Gallinule.—Van Cortlandt Park, April 16 (Cruickshank); Little Swartswood Lake, Sussex County, N. J., May 23 (Griscom, Carter and Howland).

Fulica americana. American Coot.—Overpeck Creek, N. J., April 11 (Baker, Griscom, Bronx Bird Club); Little Swartswood Lake, Sussex County, N. J., May 23 (Griscom, Carter and Howland); Jones Beach, May 30 (Eaton and Friedmann); Dyker Heights, Brooklyn, Nov. 28 (Hix); Montauk, 9 on Dec. 27 (Baker, Boulton, Crosby and Griscom).

Philohela minor. Woodcock.—Smithtown Branch, L. I., Feb. 18 (F. C. Willard); Elizabeth, N. J., big flight on March 28 to April 11 (Urner); Central Park, April 9 (Capen); Westchester County, found in two places on June census; Bayport, L. I., 1 on Dec. 26 (Maynard A. Nichols).

Gallinago delicata. Wilson's Snipe.—Mt. Kisco on March 20 (Mrs. Tucker); Van Cortlandt Park, March 25 (Cruickshank); Elizabeth, N. J., largest flight in years March 26 to April 11 (Urner); Long Beach, May 15 (Janvrin); Sussex County, May 23 (Carter, Griscom and Howland).

Micropalama himantopus. Stilt Sandpiper.—Long Beach, Aug. 15 (Matuszewski).

Tringa canutus. Knot.—Long Beach, 36 on Aug. 8 (Matuszewski); Dyker Heights, Brooklyn, Aug. 19 (C. Johnston) and also Sept. 9.

Pisobia maculata. Pectoral Sandpiper.—Bronx, May 15 (Bronx County Bird Club); Long Beach, May 23 (Nathan); Dyker Heights, Brooklyn, May 26 (Hix); Hunts Point, May 27 (L. N. Nichols); Bronx region, Nov. 7 (Hickey).

Pisobia fuscicollis. White-rumped Sandpiper.—Long Beach, May 15 (Janvrin), and 4 on Nov. 13 (C. Johnston); Hunts Point, May 15 (Cruickshank); Dyker Heights, Brooklyn, Oct. 30 (C. Johnston).

Pisobia bairdi. Baird's Sandpiper.—Dyker Heights, Brooklyn, on Sept. 22 (C. Johnston).

Pelidna alpina sakhalina. Red-backed Sandpiper.—Dyker Heights, Brooklyn, May 26 (Hix); Oak Island Beach, Aug. 28 (C. Johnston).

Ereunetes pusillus. Semipalmated Sandpiper.—Dyker Heights, Brooklyn, April 11 (Nathan); Bronx region, May 8 (Kuerzi); Manursing Island, 29 on June 11 (Coles).

Ereunetes mauri. Western Sandpiper.—Dyker Heights, Brooklyn, 1 on Aug. 14 (C. Johnston); Rye Beach, Sept. 12 (Hickey).

Calidris leucophæa. Sanderling.—Montauk, 1 on Dec. 27 (Baker, Boulton, Crosby and Griscom).

Totanus melanoleucus. Greater Yellow-legs.—Overpeck Creek, N. J., April 4 (Eaton, Griscom, et al.); Bronx region, April 6 (Hickey); Manursing Island, 11 on June 11 (Coles); Long Beach, Nov. 2 (Griscom).

Totanus flavipes. Lesser Yellow-legs.—Dyker Heights, Brooklyn, May 9 (Hix).

Catoptrophorus semipalmatus. Willet.—Lawrence, L. I., 1 on May 9 and on June 9 (H. F. Stone); Long Beach, August 15 (Matuszewski).

Actitis macularia. Spotted Sandpiper.—Grassy Sprain, Westchester County, Oct. 23 (Kuerzi).

Bartramia longicauda. Upland Plover.—Elizabeth, N. J., April 3 (Urner); Westbury, L. I., April 15 (Rudyerd Boulton).

Tryngites subruficollis. Buff-breasted Sandpiper.—Dyker Heights, Brooklyn, 2 on Oct. 3 (Hix).

Numenius hudsonicus. Hudsonian Curlew.—South Shore, L. I. Unusually common through July.

Squatarola squatarola. Black-bellied Plover.—Long Beach, Nov. 13 (C. Johnston).

Charadrius dominicus. Golden Plover.—Tod's Neck, Conn., 1 male and 2 females on May 30 (Coles and Johnson); the best flight in many years; the species undoubtedly increasing; Long Beach, Aug. 8 (Matuszewski); Dyker Heights Park, Oct. 24 (Nathan) and Nov. 7 (Hix); noted on the meadows at Elizabethport from Sept. 18 to Oct. 12, a maximum of 36 birds (Urner).

Oxyechus vociferus. Killdeer.—Pelham Bay, March 4 (Cruickshank); Dyker Heights, Brooklyn, nest and two eggs on May 5 (Nathan); Mamaroneck, 1 pair found breeding (Coles).

Aegialitis semipalmata. Semipalmated Plover.—Long Beach, April 25 (Hix) and Nov. 2 (Griscom); Mamaroneck, Oct. 17 (Kassoy).

Arenaria interpres morinella. Turnstone.—Elizabeth, N. J., first local record, July 28 (Urner).

Colinus virginianus. Bob-white.—Westchester County census, 16 observed on five different routes; Walkill Valley, N. J., 1 male (census); Newton, Sussex County, N. J., 1 male on May 23 (Griscom, Carter and Howland).

Bonasa umbellus. Ruffed Grouse.—Lake Waccabuc, June 13 (Griscom).

Zenaidura macroura carolinensis. Mourning Dove.—Bronx Park, Feb. 12 (Cruickshank); Central Park, Nov. 1 (Miss Capen); Miller Place, L. I., 2 on Dec. 22 (George P. Helme).

Cathartes aura septentrionalis. Turkey Vulture.—Overpeck Creek, N. J., April 17 (Cruickshank); Central Park, April 22 (Griscom).

Circus hudsonius. Marsh Hawk.—Mt. Kisco, N. Y., 1 on June 13 (Eaton).

Accipiter velox. Sharp-shinned Hawk.—Westchester County census, 2 seen (Kuerzi and Griscom); Bear Swamp, N. J., pair seen on May 23 (Griscom, Carter and Howland).

Astur atricapillus. Goshawk.—Douglaston, L. I., 2 on Jan. 29 (Lewis Walker); New Rochelle, Jan. 23 (Coles); unprecedented flight tall of 1926; Stag Lake, N. J., over 50 killed from Oct. 10 on (Von Lengerke); Stony Point (Carter); Nyack (Potter); Wyanokie, Nov. 14 (Carter); Bronx Park, Nov. 20 (C. Johnston); Pelham Park and Croton Point, 1 on Dec. 19 (Baker, Eaton and Ingle); Bronx region, 3 on Dec. 26; Newton, N. J., Nov. 14 (Griscom); Elizabeth, N. J., Dec. 19 (Urner); Staten Island, Dec. 23 (Cruickshank and Hickey).

Buteo borealis. Red-tailed Hawk.—Sussex County, pair seen on wooded hill between Branchville and Newton on May 23 (Carter, Howland and Griscom); Central Park, Nov. 3 (Griscom, C. Johnston and Watson).

Buteo platypterus. Broad-winged Hawk.—Bronx Park, May 9 (Cruickshank); Grassy Sprain, found breeding on June 19 (Carter).

Archibuteo lagopus sancti-johannis. Rough-legged Hawk.—Pelham, 2 on Jan. 17 (Kuerzi); Boonton, N. J., March 28 (Carter); Overpeck Creek, N. J., April 17 (Cruickshank).

Aquila chrysaetos. Golden Eagle.—Fisher's Island, 1 adult male, early October (H. L. Ferguson).

Haliaeetus leucocephalus. Bald Eagle.—Bernardsville, N. J., May 18 (Col. Kuser); Central Park, May 19 (Crosby and Griscom); Wawayanda census, 1; Peach Lake, Westchester County, 1 adult on Aug. 7 (Griscom).

Falco columbarius. Pigeon Hawk.—Central Park, April 23 (Griscom); Hunters Island, April 24 (Kuerzi); Kingsbridge, May 4 (Cruickshank).

Pandion haliaetus carolinensis. Fish Hawk.—Smithtown Branch, Feb. 14 (L. W. Turrell); Quogue, L. I., one nest on May 23 (Watson and Lewis); Hempstead, L. I., March 25 (W. F. Nichols); Mastic, March 27 (J. T. Nichols); Larchmont Lake, 1 on June 11 (Coles); Mt. Sinai, L. I., Nov. 2 (R. C. Murphy); Staten Island, Nov. 27 (Carol Stryker).

Aluco pratincola. Barn Owl.—Near Hunters Island on Jan. 10 (Kassoy, Herbert and Kuerzi); Pelham, Jan. 23 (Cruickshank); Elizabeth, N. J., 1 found dead Feb. 27 (Urner).

Asio wilsonianus. Long-eared Owl.—Pelham Bay, 3 on Jan. 16 (Cruickshank); Bronx Park, 3 on Feb. 12 (Cruickshank); Elizabeth, N. J., April 11 (Urner); Englewood, N. J., Nov. 29 (L. N. Nichols).

Asio flammeus. Short-eared Owl.—Overpeck Creek, 4 on April 3 (Griscom and Eaton) and 1 on April 25 (Griscom, Baker and Eaton); Dyker Heights, Brooklyn, Oct. 22 (C. Johnston).

Strix varia. Barred Owl.—Central Park, April 27 (Griscom).

Cryptoglaux acadica. Saw-whet Owl.—Elizabeth, N. J., April 2 and 7 (Urner); Plainfield, N. J., Dec. 5 and 12 (Miller).

Bubo virginianus. Great Horned Owl.—Bronx Park, winter 1926, 2 on March 8; Springdale Swamp, Sussex County, N. J., May 23 (Griscom, Carter and Howland); Cedar Pond, near Newfoundland, N. J., June 6 (Griscom); Central Park, Oct. 12 (C. Johnston); Riverdale, N. Y., 1 shot last week in November (A. Griscom).

Nyctea nyctea. Snowy Owl.—Great flight, the first records, Long Beach, L. I., Nov. 4 (Major Hagood) and Chestnut Ridge, N. J., Nov. 6, 1 shot (P. E. Van Riper); Sauter reports 36 in taxidermist store from Nov. 10 to Dec. 4; reported from Montauk Point, Mastic, Long Beach, Staten Island, Central Islip, Smithtown, Great Neck, Amityville, Rye and Elizabeth, N. J.; several shot in Westchester; notices in papers; 8 shot at Long Beach, L. I., 2 or 3 left on Dec. 5; Fisher's Island, 40 killed; Bayport, Dec. 12 (Maynard A. Nichols); Miller Place Dec. 18 (George P. Helme); Orient, Staten Island, Dec. 25 (Stryker and Watson); Montauk, Dec. 27 (Baker, Crosby, Griscom and Boulton); Bronx region, 4 Dec. 26.

Ceryle alcyon. Kingfisher.—Jerome Reservoir, Jan. 17 (Cruickshank); Plainfield, N. J., Dec. 19 (Miller); Montauk, Dec. 27 (Baker, Boulton, Crosby and Griscom).

Coccyzus erythrophthalmus. Black-billed Cuckoo.—Central Park, May 27 (Griscom and Watson).

Melanerpes erythrocephalus. Red-headed Woodpecker.—June census in southern Westchester (Cruickshank); New Rochelle, at least two pairs nesting (Coles); Walkill Valley, 1 on June 20 (Eaton).

Phlæotomus pileatus abieticola. Pileated Woodpecker.—Near Cedar Pond, N. J., in deep swamp, June 6 (Griscom).

Picoides arcticus. Arctic Three-toed Woodpecker.—Montclair, N. J., 1 or 2 Feb. 10 and 11 (R. H. Howland); Bronx Park, Jan. 10 and Feb. 6; Nov. 14 to Dec. 31 (Bronx County Bird Club).

Sphyrapicus varius. Yellow-bellied Sapsucker.—Central Park, March 21 (Mrs. Meade); Englewood, N. J., May 11 (L. N. Nichols); Bronx, May 20 (Kuerzi); Roslyn, L. I., Nov. 20 (Mrs. Fry); Kensico, Dec. 11 (Kuerzi); Cold Spring Harbor, Dec. 19 and 23 (Boulton); numerous December records.

Antrostomus vociferus. Whip-poor-will.—Central Park, May 13 (Holgate); Quogue, L. I., 1 calling on Oct. 10 (Watson), the latest record for Long Island.

Chætura pelagica. Swift.—Dyker Heights, Brooklyn, April 17 (Nathan).

Tyrannus verticalis. Arkansas Kingbird.—Mastic, 1 migrating westward on August 29 (J. T. Nichols).

Myiarchus crinitus. Crested Flycatcher.—Central Park, July 7 (C. Johnston); breeding at Inwood (Eaton).

Sayornis saya. Say's Phœbe.—Dyker Heights, Brooklyn, Sept. 25 (Eaton) and Sept. 28 (Nathan), presumably the same bird.

Nuttallornis borealis. Olive-sided Flycatcher.—Bronx, May 23 (Cruickshank); Central Park, May 27 (Griscom) and Aug. 31 (Watson); Wawayanda, May 31 (Griscom); Byram Brook, Westchester County, June 12 (Coles); Englewood, Aug. 28 (Hickey).

Empidonax flaviventris. Yellow-bellied Flycatcher.—Bronx, May 20 (Bronx County Bird Club).

Empidonax tailii alnorum. Alder Flycatcher.—Westchester County, June census, 5 pairs in all reported by three parties.

Empidonax virescens. Acadian Flycatcher.—Central Park, May 30 (C. Johnston, Holgate and Dr. Eliot); Scarsdale, July 2 (Kuerzi).

Otocoris alpestris alpestris. Horned Lark.—Rivervale, N. J., 20 on April 11 (Kuerzi, et al.); Van Cortlandt Park, Oct. 9 (Kuerzi).

Corvus ossifragus. Fish Crow.—Pelham, Jan. 2 (Bronx Bird Club); Boonton, March 28 (Carter); Staten Island, 2 on Dec. 25 (Stryker and Watson).

Molothrus ater. Cowbird.—Bronx, Feb. 6 (Herbert); Baldwin, 2 trapped on Feb. 10 (Baasch); Central Park, April 18 (Baker) and Oct. 31 (Miss Capen); Speonk, 2 on Dec. 25 (LeRoy Wilcox).

Agelaius phœniceus. Red-winged Blackbird.—Bronx, a male and female on Feb. 7 (Bronx Bird Club); Chappaqua, Westchester County, Feb. 20 (Pangburn); Central Park, one young male on Nov. 5 (Griscom and Watson).

Sturnella magna. Meadowlark.—Central Park, May 6 (Griscom).

Icterus spurius. Orchard Oriole.—Bronx Park, May 4 (Kuerzi); Central Park, May 7 (Griscom) and May 16 (Miss Capen); Westchester County census, generally distributed, 9 pairs by 7 parties.

Euphagus carolinus. Rusty Blackbird.—Clason Point, Jan. 30 (Kuerzi and Kessler); Springdale Swamp, Sussex County, N. J., May 23 (Griscom); Flatlands, Dec. 1 (Hix); Bronx, Dec. 26 (Bronx Bird Club).

Quiscalus quiscula quiscula. Grackle.—Central Park, Jan. 13 to 25 (C. Johnston); Bronx, 2 on Feb. 14 (Herbert and Hickey); New Rochelle, 2 from Dec. 18 to Jan. 7 (L. Quindry); Garden City, 4 on Dec. 19 (J. T. Nichols).

Quiscalus quiscula aeneus. Bronzed Grackle.—West Englewood, flock of 300 on March 21 (Griscom and J. M. Johnson); Central Park, April 26 (Griscom) and Oct. 26 (Griscom and Watson) and Nov. 5 (C. Johnston, Griscom and Watson).

Hesperiphona vespertina. Evening Grosbeak.—Bayport, L. I., Nov. 21 (M. A. Nichols).

Pinicola enucleator leucura. Pine Grosbeak.—Cold Spring, Putnam County, 2 on Dec. 19 (Eaton and Ingle).

Carpodacus purpureus. Purple Finch.—Mt. Kisco, with young July 5 (Baker).

Loxia curvirostra minor. American Crossbill.—Montauk, March 14 (Eaton); Ridgewood, N. J., irregular all winter to March 21 (Walsh); Montclair, N. J., 6 on March 30 and 3 on April 10 (Mrs. Hegeman); Bronx, 8 on April 10 (Miss Schiffer) and May 6 (Kuerzi); Mt. Kisco, April 18 (Mrs. Tucker) to May 30 (Baker); Bronx, Nov. 23 (Kuerzi).

Acanthis linaria linaria. Redpoll.—Bronx Park, Feb. 6 (Cruickshank); Pelham Bay Park, Feb. 16 (L. N. Nichols); Woodlawn, 2 on Feb. 13 (Cruickshank); Mastic, 2 on March 6 (J. T. Nichols); Montauk, March 14 (Eaton); Cold Spring Harbor, L. I., March 29 (Boulton); Dyker Heights, Brooklyn, 8 on Nov. 7 (Hix).

Plectrophenax nivalis. Snow Bunting.—Long Beach, April 7 (Hix) and Nov. 2 (Griscom); Dyker Heights, Brooklyn, April 9 (Cruickshank).

Calcarius lapponicus. Lapland Longspur.—Elizabeth, N. J., 3 on Jan. 13 (Urner); Hunts Point, 2 on Feb. 6 (Cruickshank) and 1 on Feb. 1 (Kuerzi); Dyker Heights, April 17 (Nathan) and Oct. 30 (C. Johnston); Quogue, L. I., Oct. 3 (Watson); Long Beach, 1 female adult on Dec. 5 (Baker, Eliot and Griscom) and same date 1 male adult (Boulton).

Poæcetes gramineus. Vesper Sparrow.—Central Park, Nov. 2 (C. Johnston); Miller Place, L. I., Dec. 22 (G. P. Helme); Staten Island, Dec. 23 (Hickey and Cruickshank); Mastic, Dec. 26 (J. T. Nichols).

Passerculus sandwichensis savanna. Savannah Sparrow.—Baychester Marshes, breeding, young found June 17 (Kuerzi); Manursing Island, 5 on June 11, evidently breeding (Coles); Central Park, Oct. 28 (Griscom).

Passerculus princeps. Ipswich Sparrow.—Oakwood Beach, 2 on Feb. 7 (Eaton) and 1 on April 10 (Kuerzi); Long Beach, 20 on Feb. 12 (Kuerzi, et al.) and 1 on April 25 (Hix); Eastchester Bay, Feb. 16 (L. N. Nichols) and 5 on March 28 (Kuerzi).

Ammodramus savannarum australis. Grasshopper Sparrow.—Grassy Sprain, Oct. 23 (Kuerzi).

Passerherbulus henslowi. Henslow's Sparrow.—Dyker Heights, April 11 (Nathan); Jerome Reservoir, May 13 (Kuerzi); Bronx, Oct. 3-18, a maximum of 5 (Kuerzi).

Passerherbulus caudacutus. Sharp-tailed Sparrow.—Long Beach, April 25 (Hix); Bronx, Dec. 26 (Kessler).

Passerherbulus nelsoni subvirgatus. Acadian Sharp-tailed Sparrow.—Jones Beach, May 29 (Griscom); Dyker Heights, Oct. 5 (C. Johnston).

Passerherbulus maritimus. Seaside Sparrow.—Long Beach, April 25 (Hix).

Zonotrichia leucophrys. White-crowned Sparrow.—Ridgewood, N. J., from Dec. 22, 1925 to 2nd week in February (Walsh); Central Park, Feb. 13 (Mc-

Mullen) and later in the month (Kassoy); unusually common Central Park, 5 on May 18 (Miss Capen); Bronx, Sept. 26 to Oct. 23, maximum of 8.

Zonotrichia albicollis. White-throated Sparrow.—Lake Waccabuc, June 14 (Hickey and Quindry).

Spizella monticola. Tree Sparrow.—Long Beach, April 25 (Hix).

Spizella passerina. Chipping Sparrow.—Van Cortlandt Park, March 21 (Cruickshank).

Junco hyemalis. Slate-colored Junco.—Bronx, May 27 (Kessler).

Melospiza lincolni. Lincoln's Sparrow.—Central Park, May 13 (Miss Capen) and 3 on May 18 (Griscom); Dyker Heights, May 18 (Hix); Hunts Point, May 18 (Kassoy); Bronx, May 18 (Dr. Wiegmann).

Pipilo erythrophthalmus. Towhee.—Westwood, N. J., Feb. 22 (Dr. Eliot); Morristown, N. J., Dec. 5 (R. C. Caskey).

Cardinalis cardinalis. Cardinal.—Scarsdale, 2 wintered (L. N. Nichols); Far Rockaway, 1 male March 31 (Lillian Wager, Bird Lore, 1926, p. 337); Riverdale, N. Y., Nov. 19 (Kieran).

Passerina cyanea. Indigo Bunting.—Central Park, male with juvenile primaries on May 4 (Griscom); Boonton, May 9 (Carter); Jones Beach, May 30 (Eaton and Friedmann).

Piranga rubra. Summer Tanager.—Fishers Island, 1 adult male found dead on April 20 (H. L. Ferguson); Mastic, female on May 16 (J. T. Nichols).

Progne subis. Purple Martin.—Kingsbridge, May 11 (Cruickshank); New Rochelle, June 13 (Quindry); Long Beach, Aug. 8 (Matuszewski).

Petrochelidon lunifrons. Cliff Swallow.—Bronx Park, April 20 (L. N. Nichols).

Hirundo erythrogastra. Barn Swallow.—Overpeck Creek, April 9 (Griscom and C. Johnston).

Iridoprocne bicolor. Tree Swallow.—South Westchester County, 2 on June 13 (Cruickshank); Wawayanda Lake, June 19 (census); Central Park, Nov. 3 (Griscom and Watson).

Riparia riparia. Bank Swallow.—Kensico, April 25 (Cruickshank); Newton, 2 on migration May 23 (Griscom, Carter and Howland); Westchester County census, 12 pairs by four parties; Walkill Valley, 2 on June 20 (Eaton); Manursing Island, 22 on June 11, bred near Rye Beach in 1925 (Coles).

Stelgidopteryx serripennis. Rough-winged Swallow.—Bronx region, April 10 (Hickey).

Bombycilla cedrorum. Cedar Waxwing.—Scattering flocks of birds in late December.

Lanius borealis. Northern Shrike.—Elizabeth, N. J., Jan. 3 (Urner); Demarest, Nov. 22, one banded (Bowdish); Central Park, Nov. 26 (Miss Capen); Culvers Lake, Sussex County, N. J., Nov. 14 (Griscom); Dyker Heights, Dec. 21 (C. Johnston); Bronx, Dec. 26 (Bronx Bird Club); Montauk, 6 on Dec. 27 (Boulton, Baker, Crosby and Griscom).

Lanius ludovicianus migrans. Migrant Shrike.—Jerome Swamp, April 24 (Cruickshank).

Vireosylva olivacea. Red-eyed Vireo.—Bronx, Nov. 14 (Cruickshank).

Vireosylva gilva. Warbling Vireo.—Englewood, May 2 (Nathan); Westchester County census, 7 pairs, by 3 parties; Central Park, May 8 (Griscom) and May 19 (Griscom and Crosby).

Lanivireo flavifrons. Yellow-throated Vireo.—Northern half of Westchester County, common summer resident; Van Cortlandt Park, breeds (Holgate).

Protonotaria citrea. Prothonotary Warbler.—Central Park, April 29, May 2 (Alfred Hayes, et al.).

Vermivora pinus. Blue-winged Warbler.—Lake Owassa, N. J., May 23 (Griscom); Amityville, May 30 (Eaton and Friedmann).

Vermivora chrysoptera. Golden-winged Warbler.—Bronx Park, May 4 (Kuerzi); Central Park, May 5; Dyker Heights, May 6 (Hix).

Vermivora rubricapilla. Nashville Warbler.—Mt. Kisco, at least 1 singing male June 5 (Baker).

Vermivora peregrina. Tennessee Warbler.—Bronx, May 13 (Kuerzi).

Vermivora celata. Orange-crowned Warbler.—Inwood, Jan. 20 (Cruickshank); Central Park, May 13 (Griscom); Bronx, May 13 (Kuerzi); Westchester, May 15 (Pangburn); Elizabeth, May 16 (Urner); Dyker Heights, May 19 (Hix).

Compsothlypis americana usneæ. Parula Warbler.—Wampus Lake, male on June 24 (Baker).

Dendroica tigrina. Cape May Warbler.—Bronx, May 8 (Kuerzi); Van Cortlandt, June 5, one singing male (Kuerzi); Central Park, May 12, May 16, 17, 18, 2 on 19; Hackensack River, May 16 (Griscom).

Dendroica æstiva. Yellow Warbler.—Long Beach, 2 on Sept. 19 (Eaton).

Dendroica cærulescens. Black-throated Blue Warbler.—Cedar Pond, N. J., found breeding on June 6 (Griscom).

Dendroica coronata. Myrtle Warbler.—Westchester County, June 12 (Coles).

Dendroica magnolia. Magnolia Warbler.—Central Park, May 5; Dyker Heights, May 6 (Nathan); Altonwood Swamp, Westchester County, June 11 (Coles); Wawayanda census, 3 singing males (Eaton); Westchester County, June 11 (Coles).

Dendroica cerulea. Cerulean Warbler.—Van Cortlandt, 1 singing male on May 27 (Cruickshank).

Dendroica castanea. Bay-breasted Warbler.—Englewood, May 9 (L. N. Nichols); Bronx, May 9 (Kuerzi).

Dendroica striata. Blackpoll Warbler.—Central Park, flight on June 1 (Watson); Westchester County census, 4 by two parties on June 13; Bronx Park, June 17 (Kuerzi).

Dendroica dominica. Yellow-throated Warbler.—Central Park, April 29, May 1 (Alfred Hayes, et al.).

Dendroica fusca. Blackburnian Warbler.—Central Park, unusually abundant in Spring of 1926; Bronx Park, May 1 (Kuerzi); Dyker Heights, May 5 (Nathan); Cedar Pond, N. J., common June 6 (Griscom), and undoubtedly breeding.

Dendroica virens. Black-throated Green Warbler.—Westchester County census, 10 pairs by 2 parties.

Dendroica vigorsi. Pine Warbler.—Boonton, May 9 (Carter); Hackensack River, near Rivervale, 3 on April 25 (Baker, Eaton and Griscom).

Dendroica discolor. Prairie Warbler.—Bronx Park, May 1, common by May 3 (Kuerzi); Croton Reservoir, 1 pair June 13 (Eaton); Top of Ridge, north of Lake Waccabuc, singing male on June 14 (Hickey); Pelham Bay, Oct. 10 (Hickey).

Seiurus noveboracensis noveboracensis. Northern Water-thrush.—Elizabeth, N. J., April 23 (Urner).

Oporornis formosus. Kentucky Warbler.—Englewood, May 16 (Nathan); Grassy Sprain, 2 on May 29 (Cruickshank); Worthington, at least two pairs in June (Watson and Kuerzi).

Oporornis agilis. Connecticut Warbler.—Central Park, Sept. 13 (Kassoy).

Oporornis philadelphia. Mourning Warbler.—Lake Owassa, Sussex County, May 23 (Carter, Griscom and Howland); Central Park, 1 male adult on June 2 (Griscom and Watson).

Geothlypis trichas. Maryland Yellow-throat.—Central Park, Oct. 28 (Griscom).

Icteria virens. Yellow-breasted Chat.—Central Park, May 3; Dyker Heights, May 18 (Hix).

Wilsonia citrina. Hooded Warbler.—Baldwin, L. I., May 13 (Baasch); Westchester County census, common summer resident.

Wilsonia pusilla. Wilson's Warbler.—Bronx, May 8 (Kuerzi); Baldwin, L. I., Oct. 29 (K. W. Baasch).

Wilsonia canadensis. Canadian Warbler.—Bronx, May 4 (Kuerzi); Central Park, May 5 (Miss Capen).

Setophaga ruticilla. Redstart.—City Hall Park, June 11 (Eaton).

Anthus rubescens. Pipit.—Baychester, May 5 (Kuerzi); Bronx, May 15 (Bronx Bird Club); Dyker Heights, August 19 (Hix); Bayport, 15 on Dec. 26 (Maynard A. Nichols).

Dumetella carolinensis. Catbird.—Brooklyn Botanical Gardens, Jan. 23 (Miss F. Wiley); Bronx Park, Dec. 12 (L. W. Nichols); Plainfield, Dec. 19 (W. deW. Miller).

Toxostoma rufum. Brown Thrasher.—Oceanside, Feb. 11-21 (Carlos Avery); Mastic, March 27-April 3 (J. T. Nichols); Demarest, N. J., Dec. 13 (Bowdish).

Thryothorus ludovicianus. Carolina Wren.—South Westchester, 1 on June 13

(Cruikshank); Mastic, Sept. 12 (J. T. Nichols); Orient, 3 on Dec. 24 (Roy Latham).

Troglodytes aëdon. House Wren.—Rye, Oct. 24 (Kassoy).

Nannus hiemalis. Winter Wren.—Bronx Park, Jan. 9 (C. Johnston); Grassy Sprain, May 9 (Cruikshank); Elizabeth, May 16 (Urner); Wawayanda, May 31 (Griscom).

Cistothorus stellaris. Short-billed Marsh Wren.—Croton Point, 1 on June 13 (Eaton and Pangburn); Altonwood Swamp, a pair on June 11 and 12 (Coles).

Certhia familiaris americana. Brown Creeper.—Grassy Sprain, May 9 (Cruikshank); Van Cortlandt Park, breeding, nest found on May 27 (Cruikshank).

Sitta canadensis. Red-breasted Nuthatch.—Bronx Park, Jan. 16 (C. Johnston) and May 18 (Bronx Bird Club).

Regulus calendula. Ruby-crowned Kinglet.—Bernardsville, N. J., May 18 (Mrs. Fry).

Poliophtila cærulea. Blue-gray Gnatcatcher.—Central Park, 1 male on April 26 (Griscom) and 1 female on April 30 (Griscom) and another on May 6; Bronx Park, a pair on May 1 (Kuerzi); Battery Park, 1 on May 7 (Nathan); Dyker Heights, 2 on May 9 (Hix); Bronx, May 20 and 21 (Cruikshank) and Oct. 11 (Kuerzi).

Hylocichla aliciaë aliciaë. Gray-cheeked Thrush.—Central Park, May 5 (Griscom).

Hylocichla ustulata swainsoni. Olive-backed Thrush.—Central Park, May 4 (Griscom).

Hylocichla guttata pallasii. Hermit Thrush.—West Norwood, May 16 (Griscom); Wawayanda, 3 singing (census); Riverdale, Aug. 11 (Griscom).

Planesticus migratorius. Robin.—Remarkable flight following warm spell after middle of January; 200 in Bronx.

Sialia sialis. Bluebird.—Bronx, Jan. 31 (Hickey); Central Park, May 19 (C. Johnston).

The Ornithological Year 1927 in the New York City Region

SPRING BY LUDLOW GRISCOM

FALL BY WARREN F. EATON

As already recorded in the report for 1926, December of that year will always be remembered for the great flight of Goshawks, Snowy Owls, *Alcidae* and Shrikes. During January of 1927 there was about the usual amount of cold and snow but the whole of February was unusually mild. During January bird life was unusually varied and abundant, even though the flights of the northern species mentioned above greatly diminished or virtually disappeared. After a heavy snowfall early in January a large number of Long-eared and a few Saw-whet Owls appeared. A number of half-hardy species such as Wilson's Snipe, Sapsucker, Cowbird, Brown Thrasher and Catbird furnished genuine mid-winter records. Perhaps the most surprising and disappointing thing about so mild and open a February, was the tardy and straggling arrival of the earliest land bird migrants, and it was not until after the first week in March that they became generally distributed. Close on their heels came the second group, in certain cases establishing early dates. Such dates established by single individual stragglers are often of little importance, but the Ruby-crowned Kinglet was recorded in several places around March 20, an absolutely unprecedented occurrence. There was wet snow on March 24, and freezing weather almost every night thereafter for some days, so that the month ended with bird-life noticeably scarcer than it was in early winter.

The most interesting of the lingering winter visitants was the Northern Shrike which was unusually numerous and which remained in numbers generally as late as the end of March and early April.

Similar conditions prevailed during early April, and up to the 11th, the mean temperature was more than 2 degrees below normal. A rising temperature brought a big flight of the first group of April migrants on April 13, and in certain species the number of individuals was in the proportions of a May wave. There was another big flight on April 15, no less than three "one party" lists exceeding 60 species. The outstanding feature of this movement was the unprecedented abundance of the Sapsucker, a species which is normally uncommon to rare in spring. I saw over 20 individuals in Central Park on the 13th, and 15 at Englewood on the 15th, over a route where I had

never seen more than 3 in spring before. The other notable feature of the first half of April was the great falling-off in the number of fresh water ducks. Their absence during March was explained on the ground that they were late, but most of them never showed up at all. At such a choice spot as Overpeck Creek, for instance, the number of individuals recorded was certainly less than half that of the previous year, and the rarer species were mostly not recorded at all. Along the Hudson River in Dutchess County, Mr. Crosby reported a relatively greater decline even than this. While it is quite probable that the hardier species such as Pintail and Baldpate came through along the coast in February, this cannot explain the scarcity or absence of Teal, Shoveller and Ring-necked Ducks from their preferred haunts in early April. The balance of April was relatively cool and relatively uneventful. The only marked flight was on April 29.

The month of May was probably one of the most eventful in the history of the Linnæan Society, and certainly no group of observers ever worked harder or more enthusiastically. Well organized and tireless parties scoured the vicinity of the city in every direction, and the migration furnished sufficient thrills to reward the energy expended. Keen rivalry in all-day censuses merely served to double the usual number taken, and to show how many birds can be found in this Region, if one will take sufficient trouble to look for them. The opening gun was fired May 1, by Mr. Urner, who obtained 103 species alone at Barnegat, N. J. This list may be advantageously compared with a two party census of Dutchess County, N. Y., on the same day, yielding 77 species, showing the great differences at this season between the extreme southern and northern points covered by members of the Society.

The first week in May was decidedly cool, but there was marked migration nevertheless on the 3rd, 4th and 5th, which brought small numbers of Group I species to the vicinity of the City. In Dutchess County, N. Y., up the river these flights came on the 5th and 6th. There was a decided drop in temperature over the week-end, with frost in Dutchess County, and needless to say there was no wave. Nevertheless Mr. Urner obtained 108 species alone at Elizabeth. In Dutchess County three observers went out separately, covering between them the country explored on the "Big Day Census." The separate lists were 92, 90 and 89 species respectively, but the combined total

was 123. The only species of note observed was a singing male Orange-crowned Warbler (Griscom), though another had been observed on the 6th at Pine Plains (Allan Frost). The outstanding feature of the day was the anomalous scarcity of Group I residents such as the Redstart, in sharp contrast with the long list of arrivals belonging to Groups II and III. Most of these were noted only in the southern third of the County, but even in the northern third the two Cuckoos were more numerous than the Redstart, while a bird like the Blackburnian Warbler was not recorded at all.

A drizzling northeaster on Monday precluded any migration. Tuesday morning at 2 a.m. it was calm and clear with a bright moon; at 6 a.m. a dense fog came in and it began to drizzle from the southeast. These ideal conditions brought the greatest wave ever recorded to New York City. No less than 22 species arrived over night, and the scarcity of the Group I species earlier in the month was explained by their almost incredible abundance. This great wave combined Groups I, II, and III. On May 10, 1922, when similar conditions produced a great wave, 66 species were recorded in Central Park, breaking the previous record of 58. I do not suppose that any of the more experienced observers ever expected to see this list duplicated, when we consider the rapid deterioration of the Park in recent years. Nevertheless 78 species were recorded on May 10, 1927, and the size of this list cannot be ascribed to any increase in the number of observers. Outstanding features of this wave were the absence of any great rarities, and a remarkable late flight of Woodcock, no less than three individuals being found in the Ramble on this unprecedented date. It became very warm during the afternoon, and a thunderstorm set in at 9 p.m.; it was clear at 2.30 a.m. and was foggy and warm at 6 a.m. Wednesday, May 11. These conditions produced another great wave composed of Groups II-III. In Central Park there had obviously been a complete turn-over. The abundance and predominance of Group I species had disappeared. A total of 59 species was recorded, notable birds being the Gnatcatcher, a Philadelphia Vireo and two singing Cerulean Warblers.

May 12, 13 and 14 were cool with little or no migration and the great hosts of the 10th and 11th had passed on. On Sunday, May 15th, no less than five parties took all day censuses of the most strenuous kind. The results are tabulated below and arranged geographically.

1. Boonton, N. J. Watson and Carter. The remarkable list of 114 species, including the Prothonotary Warbler. Transients quite common, but no real wave.

2. West Nyack and Hackensack River to Overpeck Creek, N. J. Nathan and Peterson. The record list of 105 species. Transients quite common.

3. Bronx Region. Four parties combined in perfectly known territory produced the enormous total of 165 species. A single party (Allan Cruickshank and R. Kuerzi) obtained 120 species, breaking all local records, and also the record for the whole Atlantic Coast states strip of the United States. Transients quite common in southern two-thirds of territory, but uncommon in northern third.

4. Northern Westchester County. Baker, Griscom and Pangburn, 108 species. Transients quite scarce, a common species like the Olive-backed thrush missed entirely.

5. Dutchess County. Two parties. Crosby, Murphy, et al., in northern half, 114 species; combined total only 120 species. Transients decidedly uncommon.

From these lists it will be seen that the comparative absence of bird-life during the latter half of the week was relieved in the southern two-thirds of the Region by a flight Saturday night, but this flight did not reach the northern part of the Region, where results were relatively disappointing.

This situation made Mr. Urner and me feel that we were due for another good flight sometime during the week of Group III-IV species. Monday and Tuesday were cool and uneventful, but there was quite a flight on Wednesday the 18th, bringing the Yellow-bellied Flycatcher and Mourning Warbler, and another Philadelphia Vireo to Central Park. Accordingly Mr. Urner and I took a big day census on the 19th, starting at daylight at the Troy Meadows, working Boonton later in the morning, and working south to the Essex County Reservation, Elizabeth, and the Newark Meadows. Transients were quite common, and a list of 130 was obtained. A Barn Owl and an Orange-crowned Warbler were the most notable birds.

There was no Group V wave, but there were marked flights on May 23, May 26, and June 1, when a third Philadelphia Vireo was seen in Central Park (C. Johnston). On May 22nd Crosby, Eaton and Nichols made a final census near Rhinebeck, but there was no special migration and they obtained only 110 species.

Along the coast the Tern and Shore-bird migration was not quite so good as in the past few years. Iceland Gulls lingered quite late into May, and there was an unprecedentedly early flight of Sooty Shearwaters off-shore. This species was recorded from several points, and over 30 were seen off Southampton on May 29 (Watson). The same observer noted several Jaegers on the same day, birds which are practically unrecorded in spring in this Region.

The land-bird migration was practically over by June 6, though a singing male Summer Tanager in Bronx Park on June 12 (C. Johnston) may be taken as a fitting climax to a most remarkable and varied season. Certain it is that by this date over a dozen members of the Linnæan Society had each seen more than 200 species locally. Outstanding features of May were the number of Orange-crowned Warblers reported, the relative scarcity of the Cape May Warbler, the distinct flight of Mourning Warblers, and the sudden appearance of the Orchard Oriole in numbers in parts of the Region where it is rare and local or absent on migration.

During June, in accord with the plan to increase our knowledge of the breeding birds of the Region, there were three censuses taken on an intensive and large scale, on June 5 at Wyanokie in New Jersey, on June 11-13 on the northern shore of Long Island from Flushing to Port Jefferson including especially the high terminal moraine north of the Hempstead plain and in the Kittatinny, North Jersey section, June 18-20. The Wyanokie census was notable in that a larger proportion of species than usual were present which were undoubtedly late migrants and not true breeders, although this is chiefly conjecture. How otherwise account for the Olive-backed Thrush, Wilson's Snipe, Blackpoll, Mourning Warbler and the Olive-sided Flycatcher, whereas even the Nighthawk, the Cerulean Warbler and the Northern Waterthrush might also include stragglers. It was of course pleasing to record the Woodcock, Red-tailed Hawk, Barred and Great-horned Owls and Pileated Woodpecker together with a few species such as Alder Flycatcher, Nashville, Black-throated Blue and Canadian Warblers which give a wild and northern tinge to this interesting section. On Long Island the total list was 86 species of which 80 undoubtedly nest. The importance of this trip was in conclusively proving that the reputed presence of certain species in this northern section not found elsewhere on the island as breeders is a fact. Such are Red-shouldered Hawk, Acadian Flycatcher, Purple Finch, Rose-breasted Grosbeak,

Warbling and Yellow-throated Vireos, Louisiana Water-thrush and Yellow-breasted Chat. Subsequent investigation added the Veery on June 22 at Glen Cove and the Carolina Wren. The results of the Delaware Water Gap-Kittatinny trip were marred by wet weather but the Magnolia Warbler was found with young, the Solitary Vireo in song and the Nashville, Black-throated Blue, Blackburnian and Canadian Warblers were discovered also, extending the breeding range of these Canadian species a bit further south than previously reported.

Such late migration reports as the Greater Yellow-legs June 12 in northern Westchester and the Yellow-bellied Flycatcher on June 17 at Van Cortlandt Park leave little time before the observer may expect the returning stragglers. Mr. Allan Cruickshank of the Bronx County Bird Club is to be congratulated on discovering nests of the King Rail, Florida Gallinule, Least Bittern and Green Heron in the Van Courtlandt swamp. This aggregate is probably the most astonishing result in any one section of concentrated field-work during the breeding season.

Unusual as Mr. Griscom found the spring migration that of the fall was equally if not more so. From June 26 when Dr. R. C. Murphy saw the first Curlew until the various Christmas censuses were taken, something happened all the time. There were many early records and many late ones coupled with an extraordinary number and variety of shore-birds and such unusual stragglers as the Swallow-tailed Kite (Pangburn) and Painted Bunting (Miss Samek)

The shore bird movement was in two distinct sections, the early bringing Solitary Sandpiper July 6, Stilt Sandpiper July 8, Semipalmated Plover July 8, Long-billed Curlew July 10 and Woodcock (Inwood) July 20 and the later from August 27 to September 11 including such rarities as Buff-breasted Sandpiper, Hudsonian Godwit, Curlew Sandpiper and an abundance of Golden Plover. The stragglers from the south, Forster's Tern, Little Blue Heron, and the Egret were less common than usual but this does not mean that any were rare but only less common in contrast with the recent years 1924-1926. The Jaegers were present in numbers and the wanderings to the north of the Yellow-crowned Night Heron and the Black Skimmer showed an increase.

In general, the land bird flight was poor but this was largely because the warbler flight of August 20 and 21 was early and the large flight August 27 and 28 was during a heavy rainstorm which lasted several days. In general, August was rainy, succeeded by a beautiful

September and a generally warm late fall. December was open to the end with the exception of one storm early in the month. This condition accounts for the presence of Pipits, a Chipping Sparrow and a Maryland Yellow-throat in the Christmas censuses. The Bronx list of 73 species, Montauk 39 and Staten Island 32 are representative of this region.

On Barnegat Bay Coots were very abundant all through the fall and in all sections more Ruddy Ducks were seen than usual. Attention of local observers was turned to two productive areas this year, the Port Newark flats adjoining the famous Elizabeth marsh, where a great concentration of shorebirds occurs and Dyker Heights near Fort Hamilton, Brooklyn, at first noted as the breeding place of Coot, Rails, Least Bittern and Florida Gallinule but now accepted as a point where the diversity and concentration of migrants rivals the three Parks—Central, Bronx and Prospect. In fact few spots can show such a diversity in one season as Holboell's Grebe, Glaucous Gull, Red-headed Woodpecker, Lincoln's Sparrow, Connecticut Warbler and Carolina Wren. Perhaps the most unusual warbler record of the fall was contributed by Mr. L. N. Nichols who observed a flock on October 20 at Split Rock, near Pelham Bay, containing Black and White, 4; Nashville, 2; Tennessee, 1; Parula, 1; Cape May, 2; Black-throated Blue, 4; Myrtle, 6; Magnolia, 2; Blackpoll, 5; Black-throated Green, 17; and Yellow Palm, 3.

It is our belief that in the New York Region certain birds are greatly increasing but on the other hand there are so many more observers in the field and so many, especially, cover the same good places all the time that species such as the Brunnich's Murre, Razor-billed Auk, Kittiwake, Arctic Three-toed Woodpecker, Least Bittern, Mourning Warbler, etc., stand far less chance of being missed than they did twenty or even ten years ago. Making big lists, long trips, concentrating in the field, traveling from Montauk to Port Newark, to Westchester have become so common that a stranger glancing at the mass of data accumulated in the course of a year might get too good an impression of bird life in the New York Region. One cannot go out anywhere and pick up rarities. A wide experience, a great many hours in the field, many trips to special out of the way places, like Jones Beach, Port Newark, Dyker Heights, etc., are necessary before any especially new pick-up can be obtained. No one person can hope to cover all the ground and the annotated list includes the

work of dozens of keen field students. Probably no region east of the Rockies is covered so thoroughly.

1927 RECORDS

Colymbus holbælli. Holbøell's Grebe.—Dyker Heights, March 25, Nov. 8 and 10 (C. Johnston); Bronx Region, 5, Oct. 16 (Bronx County Bird Club).

Colymbus auritus. Horned Grebe.—Dyker Heights, Oct. 26 (Hix).

Podilymbus podiceps. Pied-billed Grebe.—Dyker Heights, March 1 (C. Johnston); Bronx Region, breeding evidence on pond just below Kensico Reservoir, established Aug. 21 and Sept. 18, by Kuerzi, Kassoy and Herbert; also Dec. 27 (Kuerzi); Long Beach, Oct. 16 (Janvrin); Milltown, N. J., Nov. 15 (P. L. Collins).

Gavia immer. Loon.—Croton Lake, June 10 one, and July 31 four; probably breeding (J. Kuerzi); Boonton Reservoir, July 24 (Eaton).

Gavia stellata. Red-throated Loon.—Bronx Region, April 24 and May 15 (Kuerzi).

Uria lomvia. Brunnich's Murre.—Mastic, Jan. 27 (W. S. Dana); Sandy Hook, N. J., Feb. 3, 2 (Crosby and Griscom); Croton Point, Dec. 25 (J. and R. Kuerzi).

Alca torda. Razor-billed Auk.—Neponsit, L. I., one caught alive March 14 (Griscom); Manursing Island, Dec. 11 (Kuerzi and Kassoy).

Stercorarius pomarinus. Pomarine Jaeger.—Dyker Heights, Aug. 19 (C. Johnston).

Stercorarius parasiticus. Parasitic Jaeger.—Pelham Bay, May 26 (L. N. Nichols); Southampton, several May 28-30 (Watson); Breezy Point, 18 Aug. 30 (L. N. Nichols).

Rissa tridactyla. Kittiwake.—Dyker Heights, Jan. 1 (Peterson and Nathan); Bronx Region, Dec. 7 (Kuerzi); Dec. 26 (Matuszewski and Hickey).

Larus hyperboreus. Glaucous Gull.—Central Park, March 24 (Griscom); Jones Beach, July 24 (Griscom); Dyker Heights, Nov. 10 (C. Johnston); Bronx Region, Dec. 26 (Matuszewski and Hickey).

Larus leucopterus. Iceland Gull.—A comparison of the records of this and the above species indicates that for 1927 it was far more abundant. There were numerous records in January, February and March, including Elizabeth region (Urner); Brighton Beach (Peterson); Dyker Heights (Nathan); Bronx Region (Cruickshank) and Central Park, March 8 (F. E. Watson). The latest record was one in the Bronx Region, May 15, reported by the club. A single bird was present on the Hudson near Dykman St. in November and December (Cruickshank).

Larus kumlieni. Kumlien's Gull.—1 Central Park, March 9, identified by F. E. Watson and J. T. Nichols.

Larus marinus. Black-backed Gull.—Central Park, March 9 (Boulton).

Larus atricilla. Laughing Gull.—Manhattan Beach, 1, Jan. 13 (Kessler and J. Kuerzi) New York Bay, 1, Dec. 26 (Hix).

Sterna caspia. Caspian Tern.—Long Beach, Sept. 3 and 11 (Watson).

Sterna forsteri. Forster's Tern.—Quogue, Aug. 6 (Griscom); Easthampton, Sept. 10 (Helmuth); Newark marshes, Oct. 1 (Urner).

Sterna hirundo. Common Tern.—Oakwood Beach, 34, Nov. 15 (L. N. Nichols).

Hydrochelidon nigra surinamensis. Black Tern.—Hudson River, off Riverdale, Oct. 15 (Kuerzi); Dyker Heights, Oct. 27 (C. Johnston).

Rynchops nigra. Black Skimmer.—Jones Beach, Aug. 11 (Watson); Breezy Point, L. I., 4 Aug. 22 and 2 Aug. 30 (L. N. Nichols).

Puffinus griseus. Sooty Shearwater.—Jones Beach, 2 May 22 (Cleaves); Southampton, 1 May 28-30 (Watson).

Sula bassana. Gannet.—Bronx Region, Nov. 6 (Herbert and Hickey).

Phalacrocorax auritus. Double-crested Cormorant.—Mastic, July 9 (J. T. Nichols); July 17 (F. E. Watson); Long Island Sound, July 23 (Bronx County Bird Club).

Lophodytes cucullatus. Hooded Merganser.—This species is being seen more frequently than in the past. Kensico Reservoir, Feb. 12, April 24 and Oct. 22 (Kuerzi); Overpeck Creek, April 15 (Griscom); Mastic, Oct. 23 (J. T. Nichols); Staten Island, Dec. 24 (Hix and Cruickshank).

Anas platyrhynchos. Mallard.—Nest on Overpeck Creek, April 3. Mr. Weber expressed the opinion that these were not semi-domesticated birds.

Mareca penelope. European Widgeon.—Long Beach, Sept. 21 (Hix).

Nettion carolinense. Green-winged Teal.—Nordhorff Ice Pond, Englewood, Oct. 16 (Hix).

Spatula clypeata. Shoveller.—Hopewell Pond, Sussex County, N. J., 3 Dec. 4 (J. L. Edwards).

Dafila acuta. Pintail.—Elizabeth, N. J., Feb. 19 and Sept. 8 (Urner).

Aix sponsa. Wood Duck.—Englewood, April 10 (Crowell); Bronx Region late dates, Dec. 26 and 29 (Cruickshank and Kuerzi).

Marila americana. Redhead.—Clason Point, 4 Feb. 12 (Kessler); Bronx Region, 2 Oct. 16 (Bronx County Bird Club).

Marila valisineria. Canvasback.—Englewood, April 24 (Griscom).

Marila marila. Greater Scaup.—Dyker Heights, Jan. 5 (Nathan and Peterson).

Marila collaris. Ring-necked Duck.—Kensico, May 15 and Oct. 22 (Kuerzi).

Clangula clangula americana. Goldeneye.—Hopewell Pond, Sussex County, N. J., 7 Dec. 4 (J. L. Edwards).

Charitonetta albeola. Bufflehead.—Dyker Heights, Jan. 9 (Peterson and Nathan) and Nov. 8 (C. Johnston).

Harelda hyemalis. Old-Squaw.—Bronx Region, 400 April 24 (Kasoy and Herbert); Staten Island, 4 May 22 (Cruickshank).

Histrionicus histrionicus. Harlequin Duck.—Montauk Point, Feb. 13, 2 (Baker and Janvrin); Dec. 8, 1 (Watson and DuMont).

Somateria spectabilis. King Eider.—A young male seen Feb. 5 at Brighton Beach by R. Peterson, Hix, Wiegmann and Myers.

Erismatura jamaicensis. Ruddy Duck.—Clason Point, Feb. 3 (Kuerzi); Overpeck, March 19 (Cruickshank); 125th St. Ferry, April 17 (Cruickshank); several records from Bronx Region in October: 50, flock, Oct. 23, at Mastic (J. T. Nichols).

Branta canadensis. Canada Goose.—Hudson River, 2 Feb. 27 (Cruickshank); Dyker Heights, 130 March 26 (Peterson).

Branta bernicla glaucogastra. Brant.—Rye Beach, Jan. 8 (Kuerzi).

Olor columbianus. Whistling Swan.—Mastic, 4 Jan. 21 (Dana).

Botaurus lentiginosus. Bittern.—Bronx, Jan. 15 (L. S. Crandell); Boonton, N. J., March 27, 3 (Carter); Van Cortlandt Park, April 3 (Crowell and L. N. Nichols).

Ixobrychus exilis. Least Bittern.—Jerome Swamp, April 29 (Cruickshank); Van Cortlandt Park, May 26, nest and eggs (Cruickshank); Bronx Region, Oct. 2 (Cruickshank).

Herodias egretta. American Egret.—East Moriches, July 1 (Miss K. Fuertes and E. Loomis); Quogue, 2 Aug. 6 (Griscom); Northport, 2 Aug. 11 (Mrs. Fry); Paulins Kill Lake, 4 Aug. 24 (J. L. Edwards); Smithtown Branch, 2 Sept. 6 (L. W. Turrell). They are getting more common nearly every year.

Florida cærulea. Little Blue Heron.—Byram Lake, July 24 (Kuerzi); Speonk, July 29 and Aug. 6 (Wilcox).

Butorides virescens. Green Heron.—Central Park, April 20 (Miss Capen); Van Cortlandt Park, June 8, nest and eggs (Cruickshank); Bronx Region, Oct. 12 (Kuerzi).

Nycticorax nycticorax naevius. Black-crowned Night Heron.—Central Park, 2 April 8 (Griscom); Englewood, Dec. 25 (Cruickshank).

Nyctanassa violacea. Yellow-crowned Night Heron.—4 Southold, L. I., July 17 to Aug. 1 (Mrs. W. F. Atkinson); and 1 Sept. 13 (Mrs. Fry).

Rallus elegans. King Rail.—Van Cortlandt Swamp, May 22 (Watson and Kuerzi) May 26 (Cruickshank) nest with 2 eggs in a clump of grass among scattered cattails. Nest of grasses, partly arched over, and with a slide made of rushes leading into the marsh. By June 3 the nest contained 10 eggs.

Rallus virginianus. Virginia Rail.—Bayonne, 2 heard March 26 (Eaton); Cold Spring, Putnam County, April 3 (Baker and Ingle); Van Cortlandt Swamp, May 26, nest and 10 eggs (Cruickshank).

Porzana carolina. Sora.—Dyker Heights, 2 heard April 10 (Eaton).

Creciscus jamaicensis. Little Black Rail.—Jones Beach, May 22 (Friedman).

Gallinula galeata. Florida Gallinule.—Dyker Heights, April 2 (Hickey); Van Cortlandt Swamp, May 26, building nest (Cruickshank).

Fulica americana. American Coot.—Dyker Heights, March 19 (Hix); Mastic, April 1 (J. T. Nichols).

Steganopus tricolor. Wilson's Phalarope.—Pine Brook, N. J., May 22 (Mrs. C. S. Hegeman).

Philohela minor. Woodcock.—Bayonne, N. J., March 26 (Eaton); Central Park, May 10 and 22 (Holgate and Miss Capen); Inwood, Manhattan, July 20 (Eaton and Urner).

Gallinago delicata. Wilson's Snipe.—Jerome Swamp, 2 Jan. 20 (Cruickshank); Bronx, Feb. 22 (Bronx County Bird Club); Wyanokie Census, June 5 (Various); Long Beach, Sept. 3 (Watson); Liberty Corner, N. J., Dec. 3 (Stephen Urner).

Micropalama himantopus. Stilt Sandpiper.—Elizabeth, July 8 (Urner); Long Beach, Sept. 11 (Watson).

Pisobia maculata. Pectoral Sandpiper.—Bronx, Nov. 13 (Cruickshank).

Pisobia bairdi. Baird's Sandpiper.—Long Beach, 2 May 30 (Frost); Staten Island, 2 Aug. 6 (C. Johnston); Montauk Point, Aug. 7 (Griscom); Easthampton, Sept. 10 (Helmuth); Long Beach, Sept. 3 (Watson).

Pisobia minutilla. Least Sandpiper.—Long Beach, June 5 (Watson).

Pelidna alpina sakhalina. Red-backed Sandpiper.—Elizabeth, N. J., fresh remains Jan. 30 (Urner); Long Beach, May 5 (Hix) and Sept. 3 (Watson); Montauk Point, 7 Dec. 8 (Watson and DuMont).

Erolia ferruginea. Curlew Sandpiper.—Long Beach, Sept. 3 (Watson).

Ereunetes mauri. Western Sandpiper.—Long Beach, 2 May 30 (Frost); Bronx Region, Sept. 25 (Herbert).

Limosa hæmastica. Hudsonian Godwit.—Long Beach, Sept. 2 and 3 (Baker and Watson).

Totanus melanoleucus. Greater Yellow-legs.—Northern Westchester County, June 12 (Baker, Ingle and Watson).

Totanus flavipes. Lesser Yellow-legs.—Englewood, May 28 (Cruickshank); Long Beach, May 30 (Frost).

Helodromas solitarius. Solitary Sandpiper.—Dyker Heights, July 6 (DuMont).

Bartramia longicauda. Upland Plover.—Long Beach, Aug. 28 (Baker); Newark-Elizabeth meadows, latest date Sept. 25 (Edwards).

Numenius americanus. Long-billed Curlew.—Quogue, one observed 2½ hours July 10 by F. E. Watson.

Numenius hudsonicus. Hudsonian Curlew.—Crystal Brook, L. I., June 26 (R. C. Murphy). This species was especially abundant on its autumn flight.

Squatarola squatarola. Black-bellied Plover.—Montauk Point, Dec. 8 (Watson and DuMont).

Charadrius dominicus. Golden Plover.—In the New York region we had the best migration in years. At Long Beach the flight was from Sept. 3 (F. E. Watson) to Nov. 13 (Dr. Janvrin). It was seen at Easthampton, Sept. 10 (Hel-muth); Oakwood Beach, Staten Island, Sept. 25 (LaDow and C. Johnston); in the Bronx region as late as Nov. 13 (Kuerzi) and was unusually numerous on the Newark marshes where a maximum of 87 birds was recorded Oct. 1 (Urner).

Aegialitis semipalmata. Semipalmated Plover.—Overpeck Creek, 6 May 15 (Nathan); Southampton, June 7 (Boulton); Elizabeth, July 8 (Urner).

Aegialitis meloda. Piping Plover.—Elizabeth, Aug. 10 (Urner).

Zenaidura macroura carolinensis. Mourning Dove.—Dyker Heights, March 5 (Peterson); Central Park, July 26 (DuMont) and Oct. 2 (Griscom).

Cathartes aura septentrionalis. Turkey Vulture.—Riverdale, March 9 (Kieran); Englewood, April 3 (Nathan); Cold Spring, N. Y., 3 April 3 (Griscom); Dyker Heights, May 27 (Peterson and Nathan).

Elanoides forficatus. Swallow-tailed Kite.—Chappaqua, Oct. 2, seen flying overhead and unmistakable (Pangburn).

Circus hudsonius. Marsh Hawk.—Northern Westchester, June 11 and 12 (Baker, Ingle and Watson).

Accipiter velox. Sharp-shinned Hawk.—Northern Long Island census, June 11 and 12, one seen; Staten Island, Dec. 24 (Hix and Cruickshank).

Astur atricapillus. Goshawk.—Individuals from the flight of the preceding fall were recorded Jan. 1 to 31 at Islip, Pelham Bay, Manursing Island and in Essex County Reservation, N. J. On Oct. 22, one was seen at Kensico (J. and R. Kuerzi) and by Jan. 7, 1928, 5 more individuals had been seen at various places.

Buteo borealis. Red-tailed Hawk.—Wyanokie census, June 5.

Buteo lineatus. Red-shouldered Hawk.—Northern Long Island census, 8 June 11 and 12.

Buteo platypterus. Broad-winged Hawk.—Eastport, L. I., May 8 (F. Whitaker); Nyack, N. Y., Oct. 29 (C. Johnston).

Haliaeetus l. leucocephalus. Bald Eagle.—Northern Westchester County, June 11 and 12 (Baker, Ingle and Watson); Overpeck, N. J., April 24 (Hix).

Falco columbarius. Pigeon Hawk.—Bronx, April 16 (Bronx County Bird Club); Englewood, Oct. 16 (Hix); Grassy Sprain, Oct. 30 (Cruickshank).

Pandion haliaëtus carolinensis. Fish Hawk.—Elizabeth, March 27 (Urner).

Aluco pratincola. Barn Owl.—Definite breeding record about Oct. 20 at Clason Point. Numerous pellets and reports at Croton Point Dec. 25 indicate a roost of as many as eight birds (Bronx County Bird Club).

Asio wilsonianus. Long-eared Owl.—Recorded abundantly in January in suitable places; Passaic, N. J., Oct. 10 (R. Clausen).

Strix varia. Barred Owl.—Central Park, Dec. 22 (G. Morgan).

Cryptoglaux acadica. Saw-whet Owl.—Reported between Jan. 16 and March 18 from Elizabeth, N. J., Bronx Park and Mamaroneck. On March 5 Mr. Roger Peterson caught a bird in his hand at West Englewood. It had a half-eaten Shrew

in its talons. On Dec. 17, 19 and 30 Mr. John Kuerzi recorded the bird in the Bronx region.

Bubo virginianus. Great Horned Owl.—Bronx Park, Jan. 7 (Cruickshank); Orange Reservation, Jan. 16 (Urner); Central Park, April 11 (Mark Hyman, Jr.); Waccabuc Lake, 2 or 3 about a nest June 11 and 12 (Baker, Ingle and Watson); Bronx Park, Dec. 9 and 26 (J. Kuerzi); Wyanokie Census, N. J., June 5.

Nyctea nyctea. Snowy Owl.—Scattered remnants of the fall flight still remained into 1927. The latest records were: Jan. 30 at Long Beach (Watson); Jan. 26, Hackensack Meadows, N. J. (Howland); March 12, Orient, L. I. (Latham) and April 5 in the Bronx Region (Kuerzi).

Coccyzus americanus americanus. Yellow-billed Cuckoo.—Bronx Region, Oct. 23 (Kassoy and Kuerzi).

Coccyzus erythrophthalmus. Black-billed Cuckoo.—Central Park, singing, June 27 (Griscom).

Ceryle alcyon. Belted Kingfisher.—Bronx Region, Feb. 22 (Bronx County Bird Club).

Picoides arcticus. Arctic Three-toed Woodpecker.—Bronx Park, Jan. 1 and 31 (Kuerzi); first fall arrival Nov. 4 (Kuerzi).

Sphyrapicus varius. Yellow-bellied Sapsucker.—Kensico, Feb. 12 (Kuerzi).

Phlæotomus pileatus abieticola. Northern Pileated Woodpecker.—Kittatinny census, 3 June 18-20; Wyanokie census, June 5.

Melanerpes erythrocephalus. Red-headed Woodpecker.—Long Beach, Oct. 2 (J. H. Cromwell); Dyker Heights, Oct. 12 (C. Johnston).

Antrostomus vociferus. Whip-poor-will.—Rahway, N. J., April 20 (Muller); Dyker Heights, May 11 (R. Peterson); Central Park, Sept. 13 (Watson).

Chordeiles virginianus virginianus. Nighthawk.—Wyanokie census, June 5; Breeds East Orange, N. J., June 5 and later (Eaton).

Archilochus colubris. Ruby-throated Hummingbird.—Central Park, Oct. 2 (Griscom).

Myiarchus crinitus. Crested Flycatcher.—Central Park, June 13 (Eaton) and Sept. 24 (Watson); Bronx Region, Oct. 2 (Cruickshank); Plandome, Oct. 3 (Mrs. Fry).

Sayornis phæbe. Phæbe.—Cold Spring Harbor, Dec. 8 (Mrs. Fry).

Nuttallornis borealis. Olive-sided Flycatcher.—Passaic, N. J., May 21 and 22 (Edwards); Wyanokie census, June 5; Dyker Heights, May 25 (Peterson and Nathan).

Myiochanes virens. Wood Pewee.—Central Park, Oct. 29 (Watson and DuMont).

Empidonax flaviventris. Yellow-bellied Flycatcher.—Central Park, June 6 (Watson); Glen Cove, L. I., June 8 (Mrs. Fry); Van Cortlandt Park, June 17 (Cruickshank).

Empidonax virens. Acadian Flycatcher.—Coytesville, N. J., May 15

(Nathan); Long Island census, June 11 and 12; Central Park, June 7 (C. Johnston).

Empidonax traillii aliorum. Alder Flycatcher.—Wyanokie census, June 5.

Empidonax minimus. Least Flycatcher.—Passaic, N. J., Oct. 30 (Edwards).

Otocoris alpestris alpestris. Horned Lark.—Central Park, 29 Nov. 8 (C. Staloff).

Dolichonyx oryzivorus. Bobolink.—Central Park, May 18 (Miss Capen); Long Beach, May 21 (Janvrin); Long Island census, June 11-13; Garden City, July 13 (J. T. Nichols); Bronx Region, Oct. 23 (Kessler and Kuerzi).

Molothrus ater. Cowbird.—Pelham, 15 Jan. 9 (Kuerzi); Van Cortlandt, 4 March 6 (Cruickshank).

Agelaius phœniceus. Red-winged Blackbird.—Dyker Heights, Jan. 22 (Peterson and Nathan).

Sturnella magna. Meadowlark.—Central Park, March 26 (Mrs. Tucker) and Oct. 23 (Griscom).

Icterus spurius. Orchard Oriole.—Kittatinny census, 2 June 18-20.

Hesperiphona vespertina. Evening Grosbeak.—Essex County Reservation, Jan. 16 (Urner); Bronx, Oct. 27 (Cruickshank).

Pinicola enucleator leucura. Pine Grosbeak.—Beaver Lake, N. J., Jan. 8 (Quattlebaum).

Carpodacus purpureus. Purple Finch.—North Long Island census, 2 June 11-13; Cold Spring Harbor, June 25 (Mrs. Fry); Long Beach, Nov. 8 (Baker).

Plectrophenax nivalis. Snow Bunting.—Bronx, March 20 (Kuerzi); Long Beach, April 3 (Bronx County Bird Club); Englewood, Dec. 25 (Cruickshank).

Calcarius lapponicus. Lapland Longspur.—Elizabeth, N. J., Feb. 5 (Urner).

Carduelis carduelis. European Goldfinch.—Clason Point, June 14 (Muller).

Poæcetes gramineus. Vesper Sparrow.—Overpeck Creek, March 19 (Cruickshank); Central Park, April 13 (Eaton).

Passerculus sandwichensis savanna. Savannah Sparrow.—Dyker Heights, 3 Jan. 9 (Nathan and Peterson); Elizabeth, N. J., Feb. 22 (Urner).

Ammodramus savannarum australis. Grasshopper Sparrow.—Garden City, Oct. 30 (J. T. Nichols).

Passerherbulus henslowi. Henslow's Sparrow.—Northern Westchester County, 2 June 11-12 (Baker, Ingle and Watson).

Passerherbulus caudacutus. Sharp-tailed Sparrow.—Long Beach, April 3 (Peterson and Hickey).

Passerherbulus nelsoni subvirgatus. Acadian Sharp-tailed Sparrow.—Long Beach, Nov. 8 (Baker).

Passerherbulus maritimus. Seaside Sparrow.—Long Beach, April 3 (Peterson and Hickey).

Zonotrichia albicollis. White-throated Sparrow.—Above Tarrytown, June 13 (Bronx County Bird Club).

Spizella passerina. Chipping Sparrow.—Passaic, N. J., Dec. 29 (Edwards).

Melospiza lincolni. Lincoln's Sparrow.—Kensico Reservoir, Oct. 22 (Kuerzi); Dyker Heights, Oct. 23-Nov. 10 (Johnston).

Pipilo erythrophthalmus. Towhee.—Fort Washington Park, April 8 (Watson); Elizabeth, N. J., April 10 (Urner); Ardsley, Dec. 26 (Kuerzi); Staten Island, Dec. 22 (L. N. Nichols).

Cardinalis cardinalis. Cardinal.—Bronx Park, Dec. 11-26 (Bronx County Bird Club); Dyker Heights, Dec. 15 (Johnston).

Zamelodia ludoviciana. Rose-breasted Grosbeak.—Huntington, L. I., June 11 (Johnston); Cold Spring Harbor, June 18 (Mrs. Fry).

Passerina ciris. Painted Bunting.—Central Park, Sept. 9-23 (Miss Samek).

Piranga erythromelas. Scarlet Tanager.—Riverdale, Oct. 30 (Cruickshank); Van Cortlandt, Nov. 21 (L. N. Nichols).

Piranga rubra rubra. Summer Tanager.—Bronx Botanical Gardens, June 12 (Johnston).

Progne subis subis. Purple Martin.—Bronx, Sept. 25 (Kuerzi).

Hirundo erythrogastra. Barn Swallow.—Belleville, N. J., Oct. 22 (Crowell).

Iridoprocne bicolor. Tree Swallow.—Milltown, N. J., two nests, May 28 (P. L. Collins); Beaver Lake, N. J., breeding, April 14 (Quattlebaum); Wyanokie census, 4 June 5; North Westchester County, 2 June 11 and 12 (Baker, Ingle and Watson).

Riparia riparia. Bank Swallow.—Wyanokie census, 5 June 5.

Stelgidopteryx serripennis. Rough-winged Swallow.—Dyker Heights, May 17 (Nathan); Wyanokie, 5 June 5.

Lanius borealis. Northern Shrike.—Records for the winter were exceptionally numerous and birds were seen generally in all sections and late. Reported from Montauk, Bronx, Englewood, Dyker Heights, Brighton Beach, Passaic, N. J., and Milltown, N. J. Latest dates were Mastic, April 10 (J. T. Nichols); Bronx region, April 10 (Bronx County Bird Club); Central Park, April 13 (Griscom); and Elizabeth, N. J., April 3 (Urner).

Lanius ludovicianus migrans. Migrant Shrike.—Long Beach, Aug. 28 (Baker); Mr. W. T. Helmuth reported them as unusually numerous in the fall at Easthampton, L. I.

Vireosylva philadelphica. Philadelphia Vireo.—Central Park, May 11 and 18 (Griscom); June 1 (Johnston).

Vireosylva gilva. Warbling Vireo.—Long Island census, 4 June 12.

Lanivireo flavifrons. Yellow-throated Vireo.—Long Island census, 15 June 11-12.

Lanivireo solitarius. Solitary Vireo.—Garden City, April 19 (Edw. Dickinson); Kittatinny census, 2 June 18-20; Bronx region, Oct. 31-Nov. 22 (Kuerzi).

Vireo griseus griseus. White-eyed Vireo.—North Long Island census, 5 June 11 and 12; Wyanokie census, 2 June 5.

Protonotaria citrea. Prothonotary Warbler.—Boonton, N. J., May 15 (Carter and Watson).

Vermivora pinus. Blue-winged Warbler.—North Long Island census, 18 June 11 and 12.

Vermivora rubricapilla. Nashville Warbler.—Kittatinny census, 5 June 18-20; Wyanokie, 2 June 5; Pelham Park, 2 Oct. 20 (L. N. Nichols).

Vermivora celata. Orange-crowned Warbler.—Central Park, Oct. 5 (Griscom and Watson); Oct. 22 (DuMont).

Vermivora peregrina. Tennessee Warbler.—Port Jefferson, May 1 (R. C. Murphy); Bronx Park, May 3 (L. N. Nichols); Pelham Park, Oct. 20 (L. N. Nichols).

Dendroica tigrina. Cape May Warbler.—Bronx region, Oct 16 (Bronx County Bird Club); Pelham Park, 2 Oct. 20 (L. N. Nichols).

Dendroica caerulescens. Black-throated Blue Warbler.—Wyanokie census, 2 June 5; Kittatinny census, 1 June 18-20.

Dendroica coronata. Myrtle Warbler.—Central Park, March 17 (G. Morgan).

Dendroica magnolia. Magnolia Warbler.—Kittatinny census, June 18-20; three males and one young seen; Pelham Park, 2 Oct. 20 (L. N. Nichols).

Dendroica cerulea. Cerulean Warbler.—Central Park, May 11 (Griscom); Wyanokie, June 5 (Howland); Elizabeth, Oct. 2 (Urner).

Dendroica fusca. Blackburnian Warbler.—Newark, April 23 (E. Loomis, Jr.).

Dendroica virens. Black-throated Green Warbler.—North Westchester, 5 June 11-12 (Baker, Ingle and Watson); Baldwin, L. I., April 20 (K. W. Baasch); Morristown, N. J., June 9 (Randolph Jenks).

Dendroica vigorsii. Pine Warbler.—Dyker Heights, April 10 (Eaton).

Dendroica palmarum. Palm Warbler.—Mastic, Oct. 22, and Garden City, Nov. 6 (J. T. Nichols).

Dendroica palmarum hypochrysea. Yellow Palm Warbler.—Bronx region, March 26 (Cruickshank).

Dendroica discolor. Prairie Warbler.—Montclair, May 10 (Mrs. Fry); Boonton, May 15 (Carter and Watson); North Westchester County, 2 June 11 and 12 (Baker, Ingle and Watson); Cold Spring Harbor, June 25 (Mrs. Fry); Mt. Kisco, Oct. 1 (Baker); Bronx region, Oct. 10 (Cruickshank).

Seiurus noveboracensis noveboracensis. Northern Water-thrush.—Wyanokie census, 2 June 5; Passaic, 2 Aug. 6 (R. Clausen).

Seiurus motacilla. Louisiana Water-thrush.—Northern Long Island census, 6 June 11-12.

Oporornis formosus. Kentucky Warbler.—Saxon Woods, June 12 (L. N. Nichols); six pairs breeding in the Grassy Sprain, Worthington section (Kuerzi).

Oporornis agilis. Connecticut Warbler.—Dyker Heights, Sept. 24 (Johnston); Long Beach, Oct. 2 (J. H. Cromwell); Grassy Sprain, Oct. 23 (Kuerzi).

Oporornis philadelphia. Mourning Warbler.—Central Park, May 22-23 (Miss Samek); Wyanokie, 2 June 5 (Howland); Bronx region, Oct. 1 (L. N. Nichols).

Geothlypis trichas. Maryland Yellow-throat.—Newark, Nov. 24 (Edwards); Staten Island, Dec. 25 (H. K. Decker).

Icteria virens. Yellow-breasted Chat.—Great Neck, June 12 (Eaton); Brookville, L. I., July 9 (Mrs. Fry).

Wilsonia citrina. Hooded Warbler.—Passaic, Aug. 10, a migrant (Clausen).

Wilsonia canadensis. Canadian Warbler.—Wyanokie census, 3 June 5; Kittingtinny census, 4 June 18-20; Passaic, Aug. 6 (Clausen).

Setophaga ruticilla. Redstart.—Bronx Park, Oct. 31 (Kuerzi).

Anthus rubescens. Pipit.—Englewood, March 15 (L. N. Nichols); Two Bridges, N. J., May 8 (Eaton); Bronx region, May 15 (Cruickshank); Englewood, Dec. 25 (Cruickshank).

Mimus polyglottos. Mockingbird.—St. Nicholas Park, N. Y., April 8 (Watson); one seen in Central Park by Watson, Griscom and others Oct. 13 to Nov. 15; Quogue, Nov. 24 (Watson).

Dumetella carolinensis. Catbird.—Bronx Park, Jan. 1 and Feb. 12 (Kuerzi); Cold Spring Harbor, Dec. 12 (Mrs. Fry); Smithtown Branch, L. I., Dec. 23 (Mrs. Rockwell); Orient, Dec. 26 (Latham).

Toxostoma rufum. Brown Thrasher.—Seen in January at Demarest, N. J. (Bowdish); Englewood, April 3 (Hix).

Thryothorus ludovicianus. Carolina Wren.—This species seems again to be generally distributed, individuals remaining throughout the winter. Localities reported: Riverdale, Montclair, Cold Spring Harbor, Flushing, Croton Point and the Bronx region.

Nannus hiemalis. Winter Wren.—Passaic, Sept. 24 (Clausen).

Cistothorus stellaris. Short-billed Marsh Wren.—Mastic, a singing male observed by J. T. Nichols and F. E. Watson July 16 and Aug. 6.

Telmatorhynchus palustris. Long-billed Marsh Wren.—Central Park, May 14 (Griscom).

Sitta carolinensis. White-breasted Nuthatch.—Inwood, July 20 (Eaton and Urner).

Regulus calendula. Ruby-crowned Kinglet.—Rivervale, N. J., March 20 (Dr. Eliot); Montclair, May 10 (Mrs. Fry).

Poliophtila cærulea. Blue-gray Gnatcatcher.—Central Park, May 11 (Eaton); Bronx Park, July 26 (Kuerzi).

Hylocichla mustelina. Wood Thrush.—Englewood region, April 24 (Nathan and Peterson).

Hylocichla fuscescens. Wilson's Thrush.—Glen Cove, L. I., one singing (Mrs. Fry).

Hylocichla aliciae aliciae. Gray-checked Thrush.—Milltown, N. J., May 7 (P. L. Collins).

Hylocichla ustulata swainsoni. Olive-backed Thrush.—Wyanokie census, June 5.

Hylocichla guttata pallasi. Hermit Thrush.—East Norwich, L. I., Jan. 13 (Mrs. O. A. Campbell); Central Park, N. Y., Sept. 22 (Watson); Englewood, N. J., Dec. 25 (Cruickshank).

Sialia sialis. Blubird.—Dyker Heights, 30 Oct. 23 (Hix).

The Birds of Union County, N. J., and Its Immediate Vicinity—A Statistical Study

BY CHARLES A. URNER

Union County, New Jersey, lies about twenty-five miles south of the extreme north-west corner of the state. Its maximum width is about fifteen miles and its maximum depth about ten miles. But its contours are so irregular that its total area does not greatly exceed one hundred square miles. It is a section of diversified terrain and because of that fact it has, up to the present time, offered rather exceptional opportunities to the bird student. On its eastern edge it is bordered by the salt waters of Staten Island Sound and Newark Bay, the latter fully six miles long and well over a mile in width, with extensive tidal flats and even more extensive salt marshes. A considerable part of the Bay, its flats and marshes, lies outside Union County, but some of the choicest marsh area, ornithologically speaking, is included within the County's limits. Going west from the tidal lands on the County's eastern edge, the slope is very gradually upward. For six or seven miles inland the elevations range from 10 to 150 feet. The country is rolling, much of it of the typical terminal moraine character, with many small, steep hillocks and formerly many small ponds and fresh water swamps. The westerly third of the County is of a more mountainous nature, with two well-wooded trap rock ridges, rising to a maximum height of 553 feet. Its western boundary is the Passaic River, from Chatham to Berkeley Heights. The region has no large body of fresh water within its limits, but several streams, chief among them the Elizabeth and Rahway Rivers, both terminating in Staten Island Sound; also Green Brook and Blue Brook, flowing from Summit south through the Scotch Plains notch in the trap rock ridge and eventually joining the Raritan River well to the south.

The sharply contrasting environments, from salt water to fast flowing mountain brooks, naturally attract many different species of birds. But there are other factors which add to the County's bird life. It is near enough to the coast to come within the path of a stream of water bird migration; it lies in the path of a fairly large regular migration of land birds; it is far enough south to number among its residents several of the southern or Carolinian species not consistently found much farther north, and far enough north to be visited in winter by a number of the rarer northern birds.

The large and rapidly growing population Union County is called upon to support, its steadily increasing industrial enterprises, the draining and ditching activities of the Mosquito Extermination Commission and the vast amount of waste its waters are forced to carry to the sea naturally must tend steadily to reduce the diversity of its bird life. Recently a moderate interest in providing sanctuaries for birds has developed in certain municipalities and at least one extensive piece of partly wooded low ground has been brought under the control of an association of sportsmen. The County has also undertaken a fairly comprehensive park extension program and a considerable wooded area has been taken over.

As long as an appreciable part of the County is devoted to agriculture the maintenance of a large bird population is important. And even after the farms have gone and nothing remains but suburban grounds and parks to support our transient and resident bird life, the economic and aesthetic value of a large and diversified bird population continues. This fact will probably be recognized in time to assure the future of many of the County's upland birds. But the outlook for the resident marsh birds of the district—ducks, herons, rail, snipe, sandpipers, plover, etc., as well as a number of other species requiring extensive open range, is far from encouraging. And one interested in bird life can but regret that of all the miles of rich marshland, fresh, brackish and salt, with which the County was originally endowed, provision could not have been made for the preservation of at least a modest section, unspoiled and uncontaminated by oil and sewage, where many of our highly interesting forms of water birds could find a resting or breeding place. But it is a utilitarian age. With us, marshland of all descriptions is, naturally enough, viewed only as a potential breeder of mosquitoes and is marked for destruction. It is probably a question of but a few years when the great flats and salt marsh, the latter already badly damaged as a breeding place for water birds, will disappear entirely under reclamation. Most of our fresh water marshes and swamps have already been destroyed or rendered unfit for breeding grounds.

The records here presented include, besides those of Union County, a few from sections immediately adjoining the County's border. They are chiefly from the writer's own observations, extending intermittently over a period of close to forty years, though consistently carried on only since 1916. They cover particularly the

writer's records from 1916 to 1927 inclusive with a few unusual records and dates for 1928 and 1929. These observations have been largely in the northern third of the County, particularly in the vicinity of Elizabeth, in fact the great majority of the species observed have been recorded within the limits of the city.

The records, with only a few exceptions, are based upon sight field identifications, which can never be as certainly convincing as those based upon the collection of specimens. But with the use of high power binoculars and the more complete information now available upon which to base sight records the amateur student may, through diligent study and practice, reach a relatively high degree of accuracy in his observations without resorting to the use of the gun. The writer has exercised his utmost care in eliminating errors in identification from the records here presented. Unfortunately most of my field trips have been made unaccompanied, and in these cases no corroboration is possible. In more recent years, however, I have had the pleasure of the company of various members of the Linnæan Society, especially on trips over the salt marsh; among them Messrs. T. D. Carter, Warren F. Eaton, James L. Edwards, Ralph Friedman, Ludlow Griscom, Charles Johnston and several members of the Bronx County Bird Club, have contributed records. Mr. Edwards in 1928 was able to add three new species to the local list, and Messrs. Edwards and Eaton one in 1929. The late Waldron De Witt Miller, whose intensive and long continued observations of bird life in the Plainfield section of the state have been partly within the limits of Union County, generously furnished me with a number of additional records of rare species observed by him, within or close to the county line.

The writer is also indebted to Mr. Griscom of Museum of Comparative Zoology, Cambridge, Mass., for reading over the manuscript of this paper and offering helpful suggestions, and to Mr. Charles H. Rogers, Princeton University Museum, for help in assembling unusual records from the material at Princeton University left by the late W. E. D. Scott who did considerable collecting in 1896 about South Orange, probably chiefly in the area now within the Essex County Reservation. The records of the late Larue K. Holmes of Summit, N. J., have also been drawn upon.

The region most regularly and intensively covered by the writer up to 1928 extends from the shore of Newark Bay between the mouth of Bound Creek and the Jersey Central Bay bridge, westward, covering

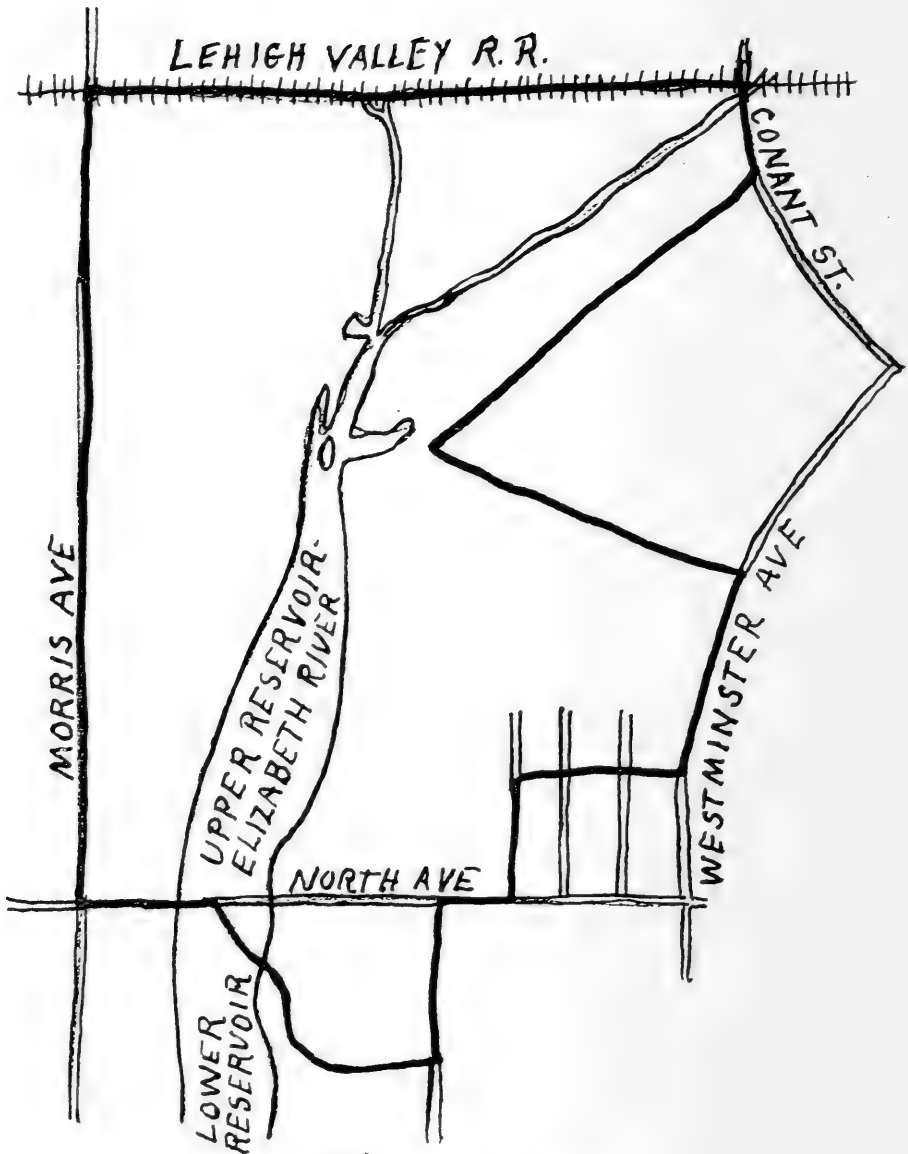
the salt marsh, the Elizabeth River watershed, particularly the section from the Elizabeth Reservoirs through the Hummocks at Union and the swamps about Kenilworth. Also the wooded regions along the Rahway River from Cranford, through Kenilworth, Springfield and Milburn, then following the stream north through the South Orange Reservation, this latter section lying outside Union County. Some time has also been spent along the trap rock ridges between Springfield and Scotch Plains and west to the Passaic River. The remainder of the County I have visited only occasionally. More recently the partially filled in area of the salt marsh lying in Essex County north of Bound Creek has been frequently covered by the writer and others. Transient shore birds, ducks and gulls, have found the shallow ponds on the fill attractive. Their prompt utilization of such easily created feeding grounds suggests a possibility of supplying water birds with a permanent "air port."

The area which I have always termed the "Elizabeth Region" does not lie entirely within Union County. It consists of a belt two to three miles wide and about eight miles long, running from Newark Bay, through Elizabeth, Union, Springfield, Milburn and the Essex County Reservation to South Orange Avenue. The inclusion of the Reservation is natural since it is a part of the Rahway River watershed.

From 1916 to the close of 1927 my field trips in the vicinity of Elizabeth were made chiefly on week-ends and holidays, with more frequent early morning trips during the May migration. Trips on the uplands probably averaged at least four hours and those on salt marsh about three hours. They were distributed as follows:

TABLE I
NUMBER OF TRIPS 1916 TO 1927

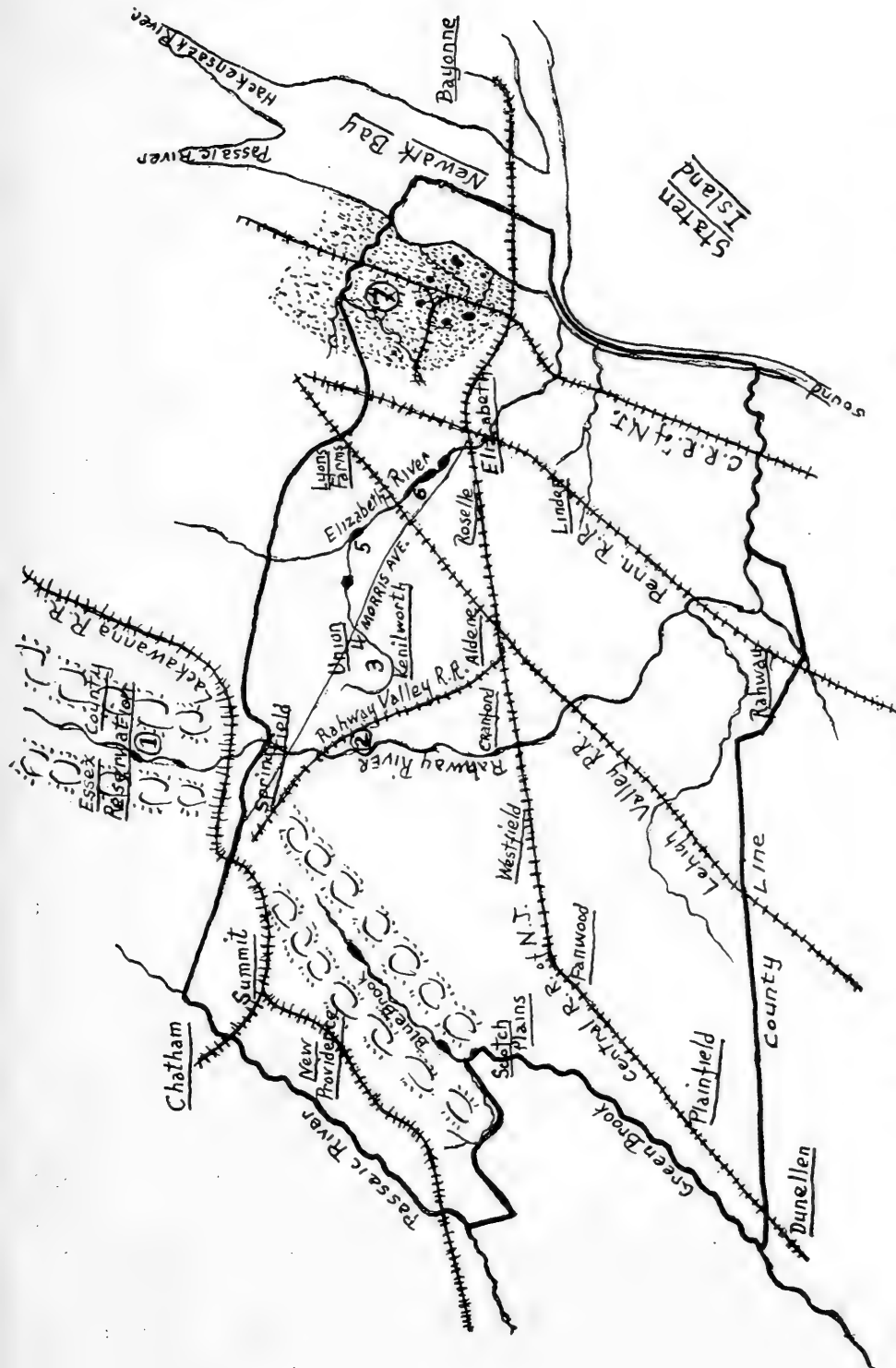
	Uplands	Salt Marsh	Total
January	56	27	83
February	51	33	84
March	51	30	81
April	56	26	82
May	73	29	102
June	48	21	69
July	28	31	59
August	29	31	60
September	47	31	78
October	54	35	89
November	49	30	79
December	44	27	71
Totals	586	351	937



Dark Line Encloses Area On Which
Annual June Census Was Taken.

CHANGES IN THE BIRD LIFE OF THE ELIZABETH REGION

It has been the writer's observation that, taking Northern Union County as a whole, there has been a decided decrease in the total native breeding birds, due to the extension of urban developments and to the ditching and diking of the salt marsh. In sections of the uplands undisturbed or only partly cultivated the bird population has



Map of Union County, N. J., and Vicinity, Showing Area Most Regularly Covered. (1) Essex County Reservation; (2) Rahway River Swamp; (3) Kenilworth Swamp; (4) Hummock Swamp; (5) Salem Pond; (6) Elizabeth Reservoirs; (7) Elizabeth-Newark Salt Marsh. Area Between Blue Brook and Rahway River, Irregularly But Frequently Covered.

fully held its own or even increased, increases being due probably to influx from regions cleared and carved up into city streets and building lots. Large areas have suffered heavily.

As a graphic representation of the status of breeding birds in the northern part of the County and the Elizabeth Region, 1920 to 1927, I have prepared from my records a few tabulations which while not conclusive are at least indicative of certain tendencies. Table 2 shows the average number of individual birds (all species) fairly classable as potential breeders, seen each daylight hour in the field during June from 1920 to 1927. Counts on the uplands and salt marshes are separated.

TABLE 2
POTENTIAL BREEDERS SEEN PER FIELD HOUR—JUNE

	Uplands	Salt Marsh
1920.....	132.03	no record
1921.....	136.00	43.53
1922.....	99.70	41.36
1923.....	107.58	37.46
1924.....	92.67	39.27
1925.....	63.71	30.01
1926.....	61.60	25.34
1927.....	72.80	24.92

On both uplands and salt marsh the tendency seems to have been decidedly toward smaller numbers though in 1928 and 1929 the salt marsh recovered part of the decline, due to less work by the mosquito ditch diggers during the breeding season.

There are 111 species of birds which may be listed as having bred within the County during the period of active field work of Mr. Miller and the writer, and 4 additional species have bred near the County's border. In Table 3 I have sought to show the 1926-1927 relative standing of the various families represented in this list of breeders in the northern part of the County. Here also the uplands and salt marshes have been considered separately. The figures must be considered only approximations for there are many variable factors besides changes in bird population which are likely to affect the numbers of birds seen even in the same locality and during the same period.

TABLE 3

AVERAGE NUMBER OF INDIVIDUALS OF THE VARIOUS FAMILIES CONSIDERED
POTENTIAL BREEDERS, SEEN IN ELIZABETH REGION PER
FIELD HOUR—JUNE, 1926-1927

	Salt Marsh	Upland
Ducks .....	.59	.24
Hérons	2.58	.33
Snipe and Sandpipers.....	.42	.59
Plover .....	.75	.14
Pheasants .....	.25	1.02
Doves .....	.....	.62
Hawks .....	.21	.38
Owls .....	.25	.17
Cuckoos .....	.....	.45
Kingfishers .....	.....	.13
Woodpeckers .....	.....	2.05
Goatsuckers .....	.....	.20
Swifts .....	.....	2.02
Flycatchers .....	.....	3.30
Crows and Jays.....	.32	3.14
Starlings .....	.....	5.04
Blackbirds, Orioles, etc.....	9.13	7.01
Native Finches and Sparrows.....	7.69	11.38
House Sparrow .....	.....	2.66
Tanagers .....	.....	.74
Swallows .....	.....	1.18
Waxwings .....	.....	.09
Vireos .....	.....	2.74
Warblers .....	.....	12.26
Thrashers, Wrens, etc.....	2.94	3.27
Nuthatches, Tits, etc.....	.....	.96
Thrushes .....	.....	5.09
Total	25.13	67.20

Comparing these figures with those of earlier years, not here reproduced, certain conclusions seem safe. On our uplands, water birds as a class are decreasing, rail having almost disappeared as breeders and ducks very nearly so. Introduced pheasants have made a definite increase. The flycatchers, crows, jays and warblers have about held their own, but according to the figures the sparrows and thrushes have slipped back, due I believe chiefly to the decrease in nesting birds over areas recently "developed." The numbers of Starlings and House Sparrows seen per hour in June have decreased, but the proportion of introduced species in the June counts of the region has been quite stable, varying from 13 to 14%.

On the uplands in the northern portion of the County as a whole sparrows seem to have lost their dominant position of a few years

ago, due doubtless to the clearing of large areas of brush land; and warblers, which predominate in the untouched wooded, hilly areas, have taken first place, the blackbird group holding third and the thrushes fourth. But in the rolling country from Elizabeth to the trap rock ridges sparrows still lead.

On the salt marsh in recent years ducks have held their meager own as breeders. Herons, as breeders, have decreased. In the 90s American and Least Bittern and Green Heron were common breeding birds, the two latter chiefly in the brackish sections nearer the uplands. Probably only the American Bittern now breeds but the Black-crowned Night Heron occurs in larger numbers, having been driven from the interior by the ditching of its fresh water swamp feeding grounds. It now feeds on the salt marsh, probably nesting in scattered points on the uplands. As far as I know, rail, once numerous, have practically disappeared from the salt marsh as breeding birds. Both Clapper and Virginia were formerly common. The nesting shore birds, as represented by Spotted Sandpiper and Killdeer, have increased slightly, their breeding being favored by the drier sand fill, especially toward Newark.

The drier diked salt marsh has permitted introduced pheasants to become well established as breeders, especially to the west of the railroad; but the numbers of nesting hawks and owls have diminished.

Marked reductions were indicated among the salt-marsh sparrows in all the drier diked sections, though numbers have been maintained on the limited undiked area and in 1928 and 1929 there was some increase in Sharp-tails. Diking has assisted in the colonization of the marsh by the Savannah Sparrow.

The salt marsh wrens have been very irregular in numbers from year to year; there has been a decided decrease since the 90s. Of the blackbird group the number of Red-wings has probably dropped. Meadowlarks have held their own while the ditching has probably favored the broader establishment of the Bobolink over the marsh, though its numbers vary greatly from season to season.

For eight years to 1927 the writer had taken for the Biological Survey a careful count of the breeding pairs on a partly farmed and partly idle area of 236 acres near the Elizabeth city line, which, because of its favorable cover, supported a greater concentration of

bird life than found over much of the County. However it gives a picture of the general complexion of breeding birds on the most favored upland area of the north part of the County, exclusive of the wooded trap rock ridges where relative numbers are very different. On the rolling uplands there are several regular breeders absent from this area, chief among them being Woodcock, Red-shouldered Hawk, Cardinal, Ovenbird, Chickadee and Veery. The most remarkable record in the area is the Louisiana Water Thrush which in this case bred on the wooded fringe of the Reservoir far from the hills and fast flowing brooks.

The area included in the census tract is now being badly damaged by development. It lies east of the Lehigh Valley Railroad between Morris Avenue on one side and Conant Street and Westminster Avenue on the other. It comprises part of the Kean Estate, the Upper Reservoir of the Elizabeth River and a section lying north of the Lower Reservoir. Its location is indicated on map appearing on page 48.

No definite decrease in total bird population was indicated in the eight year period, during which the area was little disturbed; but there were some interesting shifts and changes in the numbers of the various families. The figures record the passing of breeding Wood Ducks and Rail, definite increases in numbers of Pheasants, Mourning Doves, Song Sparrows, Warbling Vireos, Yellow Warblers and Thrashers. Decreases have occurred in Swift, House Sparrow, Field Sparrow, Swamp Sparrow, Indigo Bunting and Wood Thrush, though Indigo Bunting recovered its loss in 1929. Song Sparrows predominate. Six species—Starling, House Sparrow, Song Sparrow, Maryland Yellowthroat, Catbird and Robin—made up 56.2 per cent of the total. The three introduced species comprised 17.5 per cent of the population. This compares with about 13 per cent for the uplands of the entire north portion of the County figured from Table 3. The larger percentage in the smaller census area is due to a heavier representation of House Sparrows about the farm buildings. The percentage of Starlings is very uniform—7.5 per cent in one and 7.1 per cent in the other table.

It will be seen that the standing of the various families is quite different here than in Table 3 which covers the entire north portion of the County, including large wooded areas, especially the trap rock ridges where breeding warblers far outnumber the sparrows.

TABLE 4

Yearly Census of Nesting Pairs of Birds on 236 Acre Tract Near Elizabeth, N. J.
1920-1927 (8 Years)

	No. Years Recorded	No. of pairs			%
		High	Low	Avg.	
Wood Duck	2	2	0	.4	.2
Green Heron	2	1	0	.25	.1
Black-crowned Night Heron.....	2	2	0	.4	.2
Virginia Rail	2	1	0	.25	.1
Spotted Sandpiper	7	2	0	1.0	.5
Killdeer	7	2	0	1.1	.6
Pheasant	7	6	0	2.5	1.3
Sparrow Hawk	5	1	0	.6	.3
Screech Owl	8	2	1	1.1	.6
Yellow-billed Cuckoo	8	3	1	1.75	.9
Black-billed Cuckoo	1	2	0	.25	.1
Mourning Dove	8	5	2	2.9	1.5
Hairy Woodpecker	5	2	0	1.	.5
Downy Woodpecker	8	3	1	2.25	1.1
Red-headed Woodpecker	8	3	1	1.75	.9
Flicker	8	7	2	4.25	2.2
Nighthawk	1	1	0	.1	.5
Chimney Swift	8	8	4	5.9	3.1
Kingbird	7	4	0	1.9	1.
Crested Flycatcher	8	3	1	1.9	1.
Phoebe	4	1	0	.5	.25
Wood Pewee	4	1	0	.5	.25
Alder Flycatcher	2	1	0	.25	.1
Blue Jay	8	3	1	2.	1.
American Crow	8	3	1	1.9	1.
Fish Crow	2	1	0	.25	.1
Starling	8	16	12	13.5	7.1
Bobolink	3	2	0	.75	.4
Cowbird	8	3	1	1.9	1.
Red-winged Blackbird	8	4	2	3.	1.6
Meadowlark	8	3	2	2.4	1.3
Orchard Oriole	2	1	0	.25	.1
Baltimore Oriole	7	2	0	1.4	.7
Purple Grackle	4	3	0	.75	.4
House Sparrow	8	21	13	17.5	9.1
Goldfinch	7	1	0	.9	.5
Vesper Sparrow	8	2	1	1.25	.6
Grasshopper Sparrow	2	1	0	.25	.1
Chipping Sparrow	8	3	1	1.9	1.
Field Sparrow	8	8	1	4.	2.1
Song Sparrow	8	51	35	39.1	20.4
Swamp Sparrow	8	6	2	3.5	1.8
Towhee	5	3	0	1.	.5
Rose-breasted Grosbeak	1	1	0	.1	.05
Indigo Bunting	5	4	0	1.5	.8
Scarlet Tanager	2	1	0	.25	.1
Barn Swallow	6	2	0	1.25	.6
Rough-winged Swallow	2	1	0	.25	.1
Cedar Waxwing	1	1	0	.1	.05
Red-eyed Vireo	8	6	4	4.9	2.6
Warbling Vireo	4	2	0	.75	.4
White-eyed Vireo	1	1	0	.1	.05
Yellow Warbler	8	7	1	3.6	1.9
Chestnut-sided Warbler	2	1	0	.25	.1
Louisiana Water-trush	1	1	0	.1	.05
Maryland Yellow-throat	8	16	9	13.1	6.8
Redstart	5	1	0	.6	.3
Catbird	8	14	5	9.6	5.
Brown Thrasher	8	5	1	2.	1.
Carolina Wren	1	1	0	.1	.05
House Wren	8	10	2	6.1	3.2
White-breasted Nuthatch	2	1	0	.6	.1
Tufted Titmouse	5	1	0	.6	.3
Wood Thrush	4	3	0	.9	.5
Robin	8	19	10	14.9	7.8
Bluebird	1	1	0	.1	.05
Totals		210	172	191.7	100.

DAILY COUNTS

To the enthusiastic bird student the number of bird species to be seen in any one day or 24 hour period in a given locality is always a matter of lively interest. Competition for big daily counts in each particular section of the New York Metropolitan area regularly visited has recently become keen and each section has its own records and enthusiastic exponents. To show the possibilities of the Elizabeth region in this direction I have compiled in Table 5 from my own records only, 1916-1927, the total number of species seen in each month of the year. This might be considered the extreme maximum seasonal possibility of high counts, though the monthly totals are of course far above the reasonable expectancy of one day in the field. The table also shows the maximum number of species seen by the writer per trip on uplands and salt marsh separately; also the maximum number seen in a 24-hour period where both upland and salt marsh were covered. The totals for September and November are easily capable of improvement since no special effort was made in those two months to pile up a big day list. In 1928, owing to unusually attractive conditions on the salt marsh fill for shore birds, ducks, etc., the summer records of earlier years were far surpassed. Thus on September 23rd my list included 45 species seen on the salt marsh and 55 additional species on the uplands, a total for the day of 100. Party lists on the salt marsh reached 65.

TABLE 5

	Total species seen each month Elizabeth Region and Union County	Maximum No. Species Per Trip		
		Up- lands	Salt Marsh	Total both 24 Hours
January	86	29	19	39
February	95	32	19	42
March	99	40	18	51
April	142	51	21	64
May	183	105	47	118
June	126	79	30	97
July	131	67	34	92
August	150	74	36	93
September	177	63	34*	86*
October	172	70	39	102
November	113	38	30	50
December	91	28	17	47

*45 on salt marsh in 1928 and 100 total.

ANNOTATED LIST

The following list includes 276 species, sub-species and hybrids, of which 240 have been seen from or within the limits of the City of Elizabeth and 271 within Union County. The list for the district I have always considered the "Elizabeth Region" is 272 species and sub-species.

I have included the following data from my records:

(1) *Extreme dates of occurrence.*

(2) *Periods of average occurrence.* Average arrival and departure dates in the case of transients, have been approximated by averaging the six "best" dates from the 12 years record (1916-1927), eliminating dates that appeared altogether casual. Using the six best dates is designed to offset failure to cover the area daily and failure thus to get exact dates of arrival. Where records were fragmentary, dates very irregular and the above plan did not yield results that seemed reasonably correct, fewer years were averaged, abnormal dates being eliminated. The plan gives results in the case of most transients that check fairly with the observations of others in the New York City region.

(3) *The largest number of individuals of each species seen each month on one trip over the 12 year period.* This gives some idea of maximum occurrence and the seasonal variation in numbers. The figures here given are of course in most cases well above the average occurrence any single year.

(4) *The spring and fall or, in the case of winter birds, the winter averages of the highest trip counts recorded in 6 out of the 12 years.* These figures are intended to give a more exact idea of the relative numerical showing of transients than the foregoing. They are referred to as "Average high counts" in the list.

(5) *In the case of breeders the average number seen per trip during June from 1922 to 1927.* This is intended to indicate the more or less recent breeding status of each species in the northern part of the County. It is referred to as the "June average."

(6) *The highest number of trips on which each species was recorded any single year.* This is referred to as "Frequency Maximum."

NOTE—Species not followed by *, † or § have been seen within limits of Elizabeth or were visible from its borders; species followed by * not seen within city limits but within so-called Elizabeth Region; species followed by † seen outside Elizabeth Region but in Union County; species followed by § seen near but not in Union County.

Colymbus holbælli. Holbæll's Grebe.—A rare transient on Newark Bay; also a winter possibility. Six records: Oct. 1, 1922 to Oct. 23, 1927; April 1, 1928 to April 15, 1928. Day's maximum: 2.

Colymbus auritus. Horned Grebe.—A regular transient, occasional in winter, on Newark Bay. Oct. 17, 1925 to Dec. 28, 1924; Jan. 18, 1925; Mar. 21, 1925 to May 18, 1923. Average occurrence: Oct. 24 to May 11. Day's maximum each month: Oct., 10; Nov., 3; Dec., 2; Jan., 1; Feb., no record; Mar., 3; Apr., 3; May 6. Average high counts: fall, 5; spring, 3. Frequency maximum: seen on 7 trips in 1925.

Podilymbus podiceps. Pied-billed Grebe.—Formerly bred on brackish salt marsh ponds. Driven out as a breeder by the ditching and draining of the marshes. Now a rather uncommon transient in the county, since suitable fresh water ponds are few. Recent extreme dates: Mar. 13, 1927 to May 8, 1927; Sept. 9, 1928 to Oct. 13, 1928. Day's maximum each month: Mar., 1; Apr., 1; May, 1; Sept., 4; Oct. 4. Frequency maximum: seen on 6 trips in 1922.

Gavia immer. Loon.—Fairly regular transient on Newark Bay, and occasionally seen flying north in spring over the uplands. When thus seen the birds have been following the same general route, heading almost due north. Extreme dates: Feb. 9, 1924 to May 21, 1923; Sept. 23, 1923 to Nov. 6, 1926. Average occurrence: Mar. 12 to May 5; Sept. 24 to Oct. 20. Day's maximum each month: Feb., 1; Mar., 2; Apr., 1; May, 2; Sept., 2; Oct., 1; Nov., 1. Average high counts: spring, 1.4; fall, 1.4. Frequency maximum: seen on 4 trips in 1921.

Gavia stellata. Red-throated Loon.—Very rare transient here. One record on Newark Bay: Feb. 9, 1924.

Larus hyperboreus. Glaucous Gull.—Very rare on Newark Bay. Three records: Feb. 5 and 19, 1928 and Mar. 13, 1926.

Larus leucopterus. Iceland Gull.—First seen in 1922 with R. Friedman and probability of a recent average increase though still absent some winters. Extreme dates: Jan. 15, 1922 to Apr. 10, 1927. Day's maximum each month: Jan., 1; Feb., 4; Mar., 1; Apr., 1. Average high count (4 years) 2. Frequency maximum: seen on 6 trips in 1922.

Larus kumlieni. Kumlien's Gull.—A bird seen in a flock of several thousand Herring and Ring-billed Gulls on Newark Bay, Feb. 5, 1928. I would refer to this species. It was carefully studied both on the wing and at rest at very close range. Noticeably smaller than Herring Gull and slightly larger than Ring-billed, with a distinctive graceful flight; wing beats more rapid than Herring and down beats somewhat deeper. Tail generally white with some gray. Upper parts dirty and not uniform; some gray patches. Head, neck and upper parts at very close range seen to be slightly barred and streaked. White outer primaries showing a gray bar near tip. Bill yellowish. I first thought the bird to be a dirty immature Iceland Gull until it came very close, hovering directly before me, feeding on salt water worms. The appearance of mantle and tail, though possibly soiled, suggested a second year bird, but the primaries carried the gray bar of the adult. A second

year, bird with brown primaries and white tail seen Dec. 23, 1929, by T. D. Carter and the writer.

Larus marinus. Black-backed Gull.—Rare in winter and spring on Newark Bay. Recorded on three dates only: Jan. 23, 1925 (1); Feb. 12, 1925 (2); Mar. 5, 1923 (1).

Larus argentatus. Herring Gull.—Abundant on Newark Bay in winter and early spring. Adults appear usually in late August and numbers seen tend to increase gradually, reaching a maximum in February, though the February increase over January is probably due to the arrival of northbound migrants. Numbers in Bay vary with the tide; greatest as flats are bared. Seen on practically every trip to Bay between Sept. 1 and May 30. An increasing frequency of summer records of immature birds. Day's maximum each month: Jan., 2,000; Feb., 3,500; Mar., 1,000; Apr., 300; May, 60; June, 20; July, 10; Aug., 250; Sept., 400; Oct., 500; Nov., 1,000; Dec., 2,000. Average high counts: winter, 2,517. Frequency maximum: seen on 53 trips in 1922.

Larus delawarensis. Ring-billed Gull.—This species has made a very decided increase on Newark Bay in recent years. It was unrecorded by the writer until 1921, probably because of lack of high-power glasses and unfamiliarity with the bird. In 1921 I find 12 records, one (questionable) in spring and 11 in the fall, with day's maximum 75. There was an increase in number of records in 1922 but a drop in 1923. Since then the trend has been steadily upward. By 1926 the species was recorded every month of the year, a total of 35 records out of 40 trips to the Bay with the day's maximum 400 (both Feb. and March). The summer birds were, of course, non-breeders. Southbound adult migrants now usually begin to filter in regularly in August or in early September. There is at times a big late November and December influx and usually a sharp decrease through January and the first half of February; but an increase occurs about mid-February, the numbers of adults holding up until mid-March and sometimes well into April. Adults are rarely seen later than May 18. Day's maximum each month: Jan., 95; Feb., 400; Mar., 400; Apr., 250; May, 30; June, 85; July, 100; Aug., 150; Sept. 100 (700 in 1928); Oct., 150 (400 in 1928); Nov., 300; Dec., 500. Average 3 years high counts: late fall, 250; late winter or early spring, 300. Frequency maximum: seen on 35 trips in 1926.

Larus atricilla. Laughing Gull.—Increasing transient. Unrecorded by the winter on Newark Bay until the summer of 1921. Since that year there has been here, as elsewhere, a decided increase. The bird is relatively uncommon on the Bay in the spring. It was rarely met here up to 1928 during late July and early August. Numbers increase quite rapidly late in August and maximums are usually recorded in September. Present in irregular numbers during October and a few now linger through November and into December. Extreme dates: spring, May 16, 1926 to June 23, 1928; fall, July 8, 1927 to Dec. 12, 1925. Average occurrence: spring, May 16 to June 12; fall, July 24 to Nov. 24. Day's maximum each month: May, 6; June, 5; July, 20; Aug., 400; Sept., 1,000; Oct., 150; Nov., 3; Dec., 1. Average high counts: spring (3 years average), 3; fall (6 years average), 417. Frequency maximum: seen on 18 trips in 1927.

Larus philadelphia. Bonaparte's Gull.—Common transient; rare winter visitant. Of very irregular occurrence on Newark Bay, its numbers during any month of normal occurrence varying greatly from year to year. Wintered in 1923. Extreme dates: July 28, 1926 to June 5, 1926. Average occurrence: Aug. 20 to May 20, usually absent Jan., Feb. and March. Day's maximum each month: July, 3; Aug., 75; Sept., 50; Oct., 15; Nov., 150; Dec., 300; Jan., 50; Feb., 35; Mar., 30; Apr., 150; May, 50; June, 2. Average high counts: spring, 47; fall, 126. Frequency maximum: seen on 16 trips in 1922 and 1923.

Larus minutus. Little Gull.*§—An adult was carefully observed at close range May 12, 1929, by Warren F. Eaton and James L. Edwards from the shore of Newark Bay on the Essex County side of Bound Creek. The record is reported in *The Auk*, Vol. XLVI No. 3, and is further substantiated by a record for the same species in New York Harbor by Dr. James P. Chapin, *The Auk*, Vol. XLVI No. 3. Knowing what to look for—a black headed gull with Bonaparte's Gulls, smaller than the latter and showing dark under the wings in flight—I was able to pick the bird out of a flock in the same locality, but at long range, early in the morning of May 14, 1929. To reach its position when seen (close to the Union County line) the bird undoubtedly flew up the Bay past the shores of Union County.

Sterna caspia. Caspian Tern.—Two adult birds were found on the Newark Bay flats, within the limits of Union County, by James L. Edwards of Montclair, on May 20, 1928; the same day another individual was observed by the writer at Manasquan Inlet, Ocean County, and Dr. Janvrin, earlier in the spring, had seen a single bird at Long Beach, L. I.

Sterna forsteri. Forster's Tern.—Unrecorded until 1925 when a notable incursion occurred on Newark Bay. Specimen collected by the writer for positive identification and sent to the American Museum of Natural History. The flight on Newark Bay was also observed by John Kuerzi and other members of the Bronx County Bird Club and the Linnæan Society and the species was identified the same year in various localities about New York Harbor and at other points along the New Jersey Coast. A similar but still larger incursion was recorded by the writer and several members of Linnæan Society on Newark Bay in the summer and fall of 1928. Extreme dates: Aug. 27 to Oct. 25, 1925; Aug. 29 (Edwards) to Oct. 28, 1928. Day's maximum: Aug., 5; Sept., 300; Oct., 47. One bird Oct. 1, 1927. Frequency maximum: seen on 12 trips in 1925, and fully as many in 1928.

Sterna hirundo. Common Tern.—Transient; rare in spring (only 2 May records); irregular but almost always present in the fall. Extreme dates: May 21, 1922 to May 28, 1921; July 23, 1922 to Oct. 12, 1922. A tern, probably *hirundo*, seen Oct. 21, 1927 and another Oct. 30, 1921. Average occurrence fall: July 30 to Oct. 5. Day's maximum each month: May, 30; July, 15; Aug., 75; Sept., 50; Oct., 35. Average high counts: fall, 35. Frequency maximum: seen on 12 trips in 1922.

Sterna dougalli. Roseate Tern.—Very rare transient on Bay. One record: Sept. 21, 1924.

Hydrochelidon nigra surinamensis. Black Tern.—Transient; no spring records; irregularly common in the fall. Extreme dates: July 23, 1924 to Sept. 28, 1924, and to Sept. 30, 1928 (Peterson). Average occurrence fall: Aug. 10 to Sept. 22. Day's maximum each month: July, 2; Aug., 125 (1928); Sept., 250 (1928). Average high counts (not including 1928): fall, 35. Frequency maximum: seen on 9 trips in 1922, but more frequently in 1928.

Rynchops nigra. Black Skimmer.—Unrecorded until 1928 when one bird was seen about the month of Bound Creek, in both Union and Essex Counties, on August 29.

Oceanites oceanicus. Wilson's Petrel.—A petrel, undoubtedly this species, was seen during a heavy rain June 16, 1916, at the junction of Newark Bay and Staten Island Sound near the New Jersey Central Railroad bridge.

Phalacrocorax auritus. Double-crested Cormorant.—Rare transient on Newark Bay. One flock of 8 Oct. 11, 1924, and 3 birds May 20, 1928.

Mergus americanus. American Merganser.—Transient and winter visitant, increasingly common in spring; rather rare fall and winter. Extreme dates: Oct. 16, 1927 to May 1, 1926. Average occurrence: Nov. 22 to April 16. Day's maximum each month: Jan., 11; Feb., 30; March, 55; April, 15; May, 1; Oct., 6; Nov., 1; Dec., 4. Average high counts: spring, 32; fall, 3. Frequency maximum: seen on 12 trips in 1926.

Mergus serrator. Red-breasted Merganser.—Transient and winter visitant. Lingers later in spring than preceding; rather common. Extreme dates: Oct. 9, 1926 to June 8, 1923. Average occurrence: Nov. 24 to May 17. Day's maximum each month: Oct., 3; Nov., 1; Dec., 20; Jan., 3; Feb., 5; March, 7; April, 25; May, 10; June, 4. Average high counts: spring, 12; fall, 8. Frequency maximum: seen on 9 trips in 1925.

Lophodytes cucullatus. Hooded Merganser.—Regular but rather uncommon transient; seen most frequently in spring. Extreme dates: Feb. 25, 1922 to April 4, 1925; Nov. 13, 1921 to Dec. 3, 1922. Average occurrence: spring, March 6 to 25; fall, Nov. 15 to 27. Day's maximum each month: Feb., 1; March, 4; April, 1; Nov., 14; Dec., 3. Average high counts: spring, 2.3; fall, 3. Frequency maximum: seen on 5 trips in 1922.

Anas platyrhynchos. Mallard.—In the 90s not infrequently taken on local salt marsh in late fall and winter. Increase in spring and summer records in recent years probably due to increased numbers of feral birds bred on game farms in the east. From 1921 to 1927 recorded every month, but rare between mid-May and early August. Day's maximum each month: Jan., 1; Feb., 4; March, 5; April, 3; May, 1; June, 1; July, 1; Aug., 3; Sept., 8; Oct., 2; Nov., 1; Dec., 2. Average high counts: spring, 3; fall, 2.3. Frequency maximum: seen on 12 trips in 1923.

Anas rubripes. Black Duck.—Permanent resident; our commonest duck. Occasional broods raised on local salt marsh. Increasing transient; most common in spring because undisturbed at that season. Day's maximum each month: Jan., 150; Feb., 450; March, 400; April, 500; May, 22; June, 9; July, 40; Aug., 102 (350 in 1928); Sept., 75 (250 in 1928); Oct., 75 (150 in 1928); Nov., 300; Dec.,

100. Average high counts: spring, 392; fall, 123. June average, salt marsh, 2.4. Frequency maximum: seen on 58 trips in 1922. Rarely missed. [The Red-legged Black Duck occurs here usually as a late fall transient, winter visitant and spring transient.]

Chaulelasmus streperus. Gadwall.—Very rare transient. A drake seen at close range on Oyster Creek, local salt marsh, April 24, 1927, showing dark area on wing above the white speculum.

Mareca penelope. European Widgeon.—Drake seen on shallow pond on fill just north of Bound Creek, Jan. 6, 1929, flushed, flying along creek to Bay.

Mareca americana. Baldpate.—Transient; regular but not common in spring; rare in fall until 1928, when numbers were seen. Extreme dates: spring, Feb. 14, 1925 to May 1, 1926; fall, Sept. 5, 1928 to Oct. 22, 1922. Average occurrence: spring, March 10 to April 15. Day's maximum each month: Feb., 2; March, 11; April, 7; May, 1; Sept., 20 (1928); Oct., 20 (1928). Average high counts: spring, 6; fall, .7 (not including 1928). Frequency maximum: seen on 5 trips in 1922 and on about 10 in 1928.

Nettion carolinense. Green-winged Teal.—Transient; regular, but not common in the spring; not common in fall and rare in winter. Extreme dates: spring, March 18, 1922 to April 15, 1922; fall, Sept. 15, 1928 (Kuerzi) to Dec. 18, 1927; (questionable) Jan. 22, 1922. Average occurrence: spring, March 28 to April 8; fall records fragmentary, though several in 1928. Day's maximum each month: March, 3; April, 8; Sept., 3; Oct., 4; Nov., 12; Dec., 5. Average high counts (not including 1928): spring, 4; fall, 4. Frequency maximum: seen on 6 trips in 1922.

Querquedula discors. Blue-winged Teal.—Formerly common, sometimes abundant on salt marsh. Was our commonest August and September duck in the 90s. Largest numbers then in September. After 1905 it became rare; only 5 records from 1920 to 1927: 2 birds, March 28, 1925; 1 bird, April 24, 1927; 1 bird, Aug. 11, 1926; 1 bird, Aug. 20, 1922; 1 bird, Sept. 19, 1920. In 1928 there was a decided increase; observed July 11 to Oct. 13 with maximum 65, Sept. 30 (Peterson).

Spatula clypeata. Shoveller.—Rare transient. My only local record up to 1928 was a drake seen on the salt marsh ponds from April 10 to May 1, 1926. One bird killed about 1900 by W. B. Ley in same locality. In 1928 several records, from Sept. 5 to Nov. 4, maximum 6 on Sept. 5.

Dafila acuta. Pintail.—Regular, fairly common spring transient but until 1928 rare here in fall. Commonest in March. Extreme dates: Feb. 12, 1925 to April 18, 1926, one to May 15, 1925, one Aug. 22 to 28, 1929; Sept. 1, 1928 to Nov. 25, 1928. Average occurrence: spring, Feb. 24 to April 13. Day's maximum each month: Feb., 30; March, 76; April, 7; May, 1; Aug., 1 (1929); Sept., 35 (1928); Oct., 10 (1928); Nov., 50 (1928). Average high counts: spring, 33; fall, 2 (not including 1928). Frequency maximum: seen on 10 trips in 1925. Since 1923 the number of Pintails stopping in the spring to feed on salt marsh has dropped because of apparent damage to food supply caused by diking the marsh, though flooding of a large section in 1928 proved an attraction on the fall flight.

Aix sponsa. Wood Duck.—Previous to 1916 I had no record of the Wood Duck breeding in Northern Union County, though it probably was present. In 1916 I found it common about the Hummock Swamps at Union and along the Elizabeth River west of the Reservoir where it bred. The latter part of September that year fully 50 birds, old and young of the year, were present in the Hummock Swamps. The species held its own fairly well up to 1923, after which ditching and draining of its feeding grounds and illegal shooting resulted in a sharp decrease. A stray pair may still breed here but it has become rare both as a transient and a breeder. Extreme dates: Feb. 20, 1921 to Nov. 7, 1920, and Dec. 23, 1928. Average occurrence: March 4 to Oct. 20. Day's maximum each month: Feb., 2; March, 12; April, 11; May, 15; June, 27; July, 21; Aug., 18; Sept., 50; Oct., 11; Nov., 1; Dec. 1. June average, uplands, .7. The decrease is indicated by the following: seen on 26 trips in 1921 (maximum 18); seen on 4 trips in 1925 (maximum 3); seen on 2 trips in 1927 (maximum 1). The earliest record of young on the water is May 11, 1919.

Marila americana. Redhead.—A rare transient on Newark Bay. Two records: Feb. 13, 1923 and Dec. 12, 1925.

Marila valisineria. Canvasback.—Old baymen considered the Canvasback always in their recollection rare on Newark Bay. In late January, 1924, Canvasbacks appeared in numbers on the Bay, remaining until March 22, a maximum of 140 early in March. A few were present the following winter, the number decreasing the next year and I had only one record after February, 1926, until the spring of 1928. Extreme dates Nov. 20, 1927 to April 15, 1928. Day's maximum each month: Nov., 5; Dec., 11; Jan., 42; Feb., 125; March, 140; April, 2. Frequency maximum: seen on 9 trips in 1924.

Marila marila. Scaup Duck.—Regular and fairly common transient. Many of my sight records are not definite identifications between this and the following species though from specimens examined I believe this the commoner of the two on the Bay, especially during late fall, winter and early spring. Extreme dates of this and following combined: Sept. 23, 1928 to May 29, 1921; also June 16 and July 8, 1927. Earliest positive identification of this species, Nov. 9, 1924; latest, May 6, 1922; though a pair was recorded June 16 and July 8, 1927. Average occurrence from mid-November to mid-April. Day's maximum each month (both species): Oct., 5; Nov., 5; Dec., 3; Jan., 6; Feb., 6; March, 40; April, 40; May, 2; June, 2; July, 2. [1929 counts in spring larger.] Average high counts to 1927 (both species): spring, 22; fall, 3. Frequency maximum: seen on 9 trips in 1922.

Marila affinis. Lesser Scaup.—Transient, not as common as preceding though most of the local Scaup records during May and late October or early November are probably this species. I have satisfactorily identified the bird from specimens killed by others on several occasions and in life to my own satisfaction a number of times. Earliest positive identification Oct. 31, 1920; latest May 29, 1921. See preceding for further data.

Marila collaris. Ring-necked Duck.—This species has been recorded by me but once in Union County, a female seen at very close range Feb. 5, 1927; white

eye-ring, mark on bill and Redhead like wing, without the white line of the Scaup, noted.

Clangula clangula americana. Golden-eye.—Regular winter visitant on Newark Bay. Extreme dates: Nov. 9, 1924 to April 22, 1922. Average occurrence: Nov. 17 to March 20. Day's maximum each month: Nov., 6; Dec., 3; Jan., 3; Feb., 3; March, 3; April, 2. Average high counts: winter, 3. Frequency maximum: seen on 6 trips in 1924.

Charitonetta albeola. Bufflehead.—Fairly regular either late fall or winter on Newark Bay, but rarely over 2 records a winter. Extreme dates: Nov. 9, 1924 to Feb. 7, 1926. Day's maximum each month: Nov., 10; Dec., 1; Jan., 3; Feb., 2. Average high counts: winter, 3. Frequency maximum: seen on 2 trips in 1922 and 1924.

Harelda hyemalis. Old-squaw.—Rare late fall and winter visitor on Bay. Extreme dates Nov. 9, 1924 to Feb. 24, 1923. To 1928 only 7 records. Day's maximum each month: Nov., 6; Dec., 1; Jan., 2; Feb., 1. Average high counts, 2.2. Frequency maximum: seen on 2 trips in 1925.

Oidemia americana. American Scoter.—A rare transient on Newark Bay. One record—flock of 12, Nov. 9, 1924. Known to some old baymen.

Oidemia deglandi. White-winged Scoter.—Uncommon, but not as rare as the other Scoters on Newark Bay. Four records from 1921 to 1927; Oct. 24, 1926 (6); Oct. 25, 1925 (1); Nov. 9, 1924 (5); Nov. 26, 1925 (3). The flock of 6 Oct. 24, 1926, crossed the marsh fairly high, coming from the northwest, evidently overland migrants.

Oidemia perspicillata. Surf Scoter.—Probably the rarest of the three scoters locally. One record—3 on Dec. 6, 1925.

Erismatura jamaicensis. Ruddy Duck.—Rather rare transient; only 5 records: Oct. 24, 1920 (1); Nov. 6, 1927 (1); April 4, 1925 (1); May 11 and 13, 1923 (1).

Chen hyperboreus hyperboreus. Lesser Snow Goose.—One out of three shot Oct. 29, 1917, by F. A. Urner on the local salt marsh. Recorded *The Auk*, 1921, p. 120.

Branta canadensis. Canada Goose.—While not a very common transient over Northern Union County I have recorded the species each year from 1920 to 1927. Extreme dates March 5, 1921 to April 30, 1922; Oct. 7, 1922 to Dec. 5, 1925. Most records in March and November. Day's maximum each month: March, 21; April, 47; Oct., 1; Nov., 50; Dec., 10. Average high counts: spring, 16; fall, 13. Frequency maximum: seen on 11 trips in 1922. As a migrant I believe there has been some increase in recent years. Apparently only tired flocks alight; these occasionally linger for weeks, probably too weak to leave.

Branta bernicla glaucogastra. Brant.—Casual, on Newark Bay. One record—flock of 9, Jan. 12, 1924.

Cygnus olor. Mute Swan.—A young bird picked up exhausted in Elizabeth, Oct. 29, 1916. Another flying high from north, alighted on Reservoir, Dec., 1929.

Botaurus lentiginosus. American Bittern.—Decreasing as a breeder on the local salt marsh; quite common in the middle 90s. Extreme dates: March 25, 1928 (with Edwards) to Nov. 14, 1926. Average occurrence: April 12 to Oct. 25. Day's maximum each month: March, 1; April, 5; May, 4; June, 4; July, 6; Aug., 4; Sept., 2; Oct., 4; Nov., 1. June average: salt marsh, 1.3. Frequency maximum: seen on 17 trips in 1925.

Ixobrychus exilis. Least Bittern.—I have only one local record since 1916—one bird May 19, 1928. In the 90s, and up to the time the salt marsh was ditched and drained this bird, known locally as the "Little Red Poke" was said by consistent marsh hunters to have been a very common summer bird in and about some of the cattail beds. I saw it in such localities occasionally. Its last breeding stand was in the ponds at the Newark end of the marsh, the last spot to be drained, from which it disappeared about 1916.

Ardea h. herodias. Great Blue Heron.—This attractive heron has been fully holding its own in numbers as a transient on the local marshes. I have recorded it every month; winter records few; June birds probably non-breeders. Day's maximum each month: Jan., 3; Feb., 1; March, 1; April, 15; May, 2; June, 1; July, 7; Aug., 11; Sept., 4; Oct., 5; Nov., 4; Dec., 3. Transients usually arrive early in April, leaving about April 25. The return flight begins in July, usually the latter half, and a few birds linger into November or later. Average high counts: spring, 7; fall, 6. Frequency maximum: seen on 27 trips in 1925.

Herodias egretta. American Egret.—Summer visitant on local salt marsh. Recorded 5 out of 12 years (also in 1928-1929). Extreme dates: July 9, 1929; July 23, 1925 to Sept. 23, 1928 (Kuerzi). Average occurrence to 1928: Aug. 4 to 26. Day's maximum each month: July, 12; Aug., 21 (1928); Sept., 20 (1928). Average high counts (not including 1928): summer, 8. Frequency maximum: seen on 8 trips in 1925. The 1928 flight was the largest recorded.

Florida cærulea. Little Blue Heron.—Summer visitant on both salt marsh and fresh water swamps. Recorded every year 1920 to 1927 (also 1928-1929). Extreme dates: July 21, 1923 to Sept. 12, 1920 and Sept. 18, 1929. Average occurrence: July 28 to Sept. 6. Day's maximum each month: July, 9 (23 in 1929); Aug., 38 (1928); Sept., 34 (1928). Average high counts (not including 1928): summer, 5. Frequency maximum: seen on 8 trips in 1925. The 1929 flight was the largest recorded.

Butorides v. virescens. Green Heron.—Decreasing as a breeder; also I believe as a transient, though still regular. Formerly bred commonly, both about our fresh water swamps and in colonies in cattail swamps on salt marsh, where nests were lightly arched with living leaves. Now rarely found here in June. Extreme dates: April 9, 1922 to Oct. 12, 1917. Average occurrence: April 23 to Oct. 3. Day's maximum each month: April, 2; May, 4 ad., 3 young; June, 6 ad., 8 young; July, 8; Aug., 11; Sept., 4; Oct., 2. June average, uplands, 7. Frequency maximum: seen on 26 trips in 1921.

Nycticorax nycticorax naevius. Black-crowned Night Heron.—Common transient and summer resident. Has decreased on upland marshes and swamps but

has held its own, or increased on salt marsh. Formerly bred in Hummock Swamp and isolated nestings possibly still occur in the county. No large breeding colony known here. The species occurred in unprecedented numbers here in late summer and fall of 1925, the year of the large late summer northward movement of southern white herons, indicating some northward post-breeding movement of this species also; similar increase noted during big white heron flight of 1928. Wintered in 1925-1926. Average occurrence when not wintering: March 30 to Nov. 26. Day's maximum each month: Jan., 6; Feb., 8; March, 3; April, 20; May, 32; June, 24; July, 75; Aug., 50 (over 100 in 1928); Sept., 75; Oct., 19; Nov., 17; Dec., 2. June, average, both uplands and salt marsh, 3. Frequency maximum: seen on 49 trips in 1921.

Nyctanassa violacea. Yellow-crowned Night Heron.—Rare late summer visitant but apparently increasing. Seen 4 years out of 6, 1922 to 1927; also in 1928. Extreme dates: July 23, 1925 to Sept. 19, 1925; also Sept. 30, 1928 (Peterson). Day's maximum each month: July, 1; Aug., 1; Sept., 2. All local records immature birds which I find easily recognizable in the field by their bluer color, longer legs (bare leg shows in flight between foot and end of tail) and more rangy appearance than the Black-crowned. Frequency maximum: seen on 6 trips in 1925. Both Eaton and Friedman saw the species locally in my company and several observers saw it in 1928.

Rallus elegans. King Rail.—I have only one record, a bird seen at close range on salt marsh May 21, 1921. Mr. Griscom mentions a nest found in the Great Swamp, just outside the County, by the late LaRue K. Holmes, about 1900.

Rallus crepitans. Clapper Rail.—Formerly a common breeder on the local salt marsh but driven out as a breeder by the ditching and diking. Extreme dates: May 19, 1928 to Oct. 16, 1921. Several were present in the breeding season June, 1921, and at least one June, 1922. I have no later June records though occasional May and September records when it evidently occurs as a migrant. Day's maximum each month since 1916: May, 1; June, 4; July, 4; Aug., 1; Sept., 1; Oct., 2. June average, salt marsh, .13. Frequency maximum: seen on 9 trips in 1921.

Rallus virginianus. Virginia Rail.—Formerly our commonest rail, found in every wet meadow, fresh or brackish. Bred commonly on local salt marsh, chiefly west of the N. J. Central Railroad. Increasingly rare in recent years. Dates since 1916 fragmentary. Extreme dates: April 24, 1921 to Oct. 23, 1921. Day's maximum each month: April, 1; May, 3; June, 8; July, 4; Aug., 2; Sept., 2; Oct., 4. No records in 1926; but 1 in 1927. June average, both upland and salt marsh, .55. Frequency maximum: seen on 22 trips in 1921.

Porzana carolina. Sora.—My early records are gone but I am of the opinion that the bird formerly bred in the fresher wet meadows along the salt marsh edges; its notes were then one of the predominant spring sounds in that locality. Since 1916 only occasional records—a dead bird picked up on salt marsh Oct. 30, 1927; another Sept. 23, 1928, and a live bird Sept. 15, 1928 (Kuerzi).

Coturnicops noveboracensis. Yellow Rail.—My only local record is a specimen

taken by me on a brackish area of the local salt marsh in the fall, late in the 90s, date not preserved.

Gallinula galeata. Florida Gallinule.—Formerly a common breeder on the local salt marsh in areas cut off from direct tidal connection, where a reasonably uniform water level prevailed. It was especially numerous about the creeks and ponds just south of Great Island. My early records are not available but the bird arrived here early in April some years, and a few lingered well into October. The salt marsh birds were driven out by the ditching, making their last stand as breeders about 1916 at the north-end near Newark. My only record since 1916 is a bird seen July 11, 1920, in the Hummock Swamps near Union. Hunters informed me that the bird bred there in 1921, but ditching and other causes have rendered the locality unsuitable.

Fulica americana. American Coot.—A rare bird locally. I once shot one on the local salt marsh (in the 90s) and know of at least one other taken there in the fall. It was reported that a nest was discovered some years ago near Great Island pond and later the bird was found breeding in the Newark end of the marsh, Essex County (May, 1907).

Lobipes lobatus. Northern Phalarope.—In the 90s there were several August records of the bird being shot on the local salt marsh. One record 1916 to 1927—a single bird in fall plumage Aug., 10, 1923, which permitted close approach and which called "Quoit," "Quoit," when disturbed. Recorded in 1929 (Herbert) to Sept. 15.

Recurvirostra americana. Avocet (?).—Several years ago (1921) three young hunters whom I met on the local salt marsh in the fall, told of seeing, earlier in the season, a long-legged black and white bird "about the size of a Poke" (Green Heron) killed on the marsh by another hunter. It had, they said, webbed feet and a long bill. The description, given gratuitously and without suggestion on my part, so accurately described the Avocet that I record the particulars for what they are worth.

Philohela minor. Woodcock.—Transient and breeder. Less common than formerly but some indications of a recent increase. The bird formerly bred commonly in the sprouts near spring runs along the edges of the salt marsh; also in many suitable areas on the uplands. Extreme dates: Mar. 13, 1927 to Nov. 25, 1920. Average occurrence: Mar. 18 to Nov. 10. Day's maximum each month: Mar., 7; April, 2; May, 4; June, 3; July, 1; Aug., 3; Sept., 1; Oct., 1; Nov., 3. June average, uplands, .3. Frequency maximum: seen on 8 trips in 1920.

Gallinago delicata. Wilson's Snipe.—Transient. The bird has decreased since the middle 90s though some recent signs of an increase. My earliest records are unavailable but I recall flushing this snipe very early in spring and very late in fall or in early winter when spring runs only were open. Extreme dates: Mar. 12 1927 to May 15, 1925; Aug. 19, 1921 to Dec. 2, 1928; 2, Jan. 15, 1927. Average occurrence: spring, Mar. 25 to April 26; fall, Sept. 12 to Oct. 29. Day's maximum each month: Mar., 20 (Hunters); Apr., 20 (Hunters); May, 1; Aug., 1; Sept., 4 (1928); Oct., 5 (1928); Nov., 12 (W. W. Harrison); Dec., 1 (1928). Average high count: spring, 8; fall, 3. Frequency maximum: seen on 6 trips in 1927.

Macrorhamphus g. griseus. Dowitcher.—Never common locally within the period of my field experience but some recent indications of an increase. Dates previous to 1928 fragmentary. Extremes: spring, May 8, 1927 to May 31, 1920; fall, July 10, 1929 to Oct. 1, 1927. Day's maximum each month: May, 4; July, 18 (1928); Aug., 8 (1928); Sept., 75 (1928); Oct., 6. Average high counts previous to 1928: spring, 2.5; fall, 3. Frequency maximum: seen on 15 trips in 1928.

Micropalama himantopus. Stilt Sandpiper.—Still rather rare transient; some recent indications of a slight increase. My first definite local record for the species was July 23, 1925, flock of 5 birds, three still in breeding plumage. No 1926 records. One bird July 8, 1927, and 3 seen by Edwards July 24, 1927; 2 by Eaton and Matuszewski Aug. 14, 1927. In 1928 six records July 18 to Sept. 30 with maximum 14 Sept. 9.

Tringa canutus. Knot.—A rather rare transient locally though some recent increase. Extreme dates: May 19, 1927 to June 11, 1921; July 23, 1925 to Aug. 21, 1920 and Sept. 15, 1929. Three spring and three fall records. Day's maximum each months: May, 15; June, 1; July, 1; Aug., 10; Sept., 6 (Hickey, Herbert and Kassoy). Frequency maximum: seen on 2 trips in 1921.

Pisobia maculata. Pectoral Sandpiper.—Transient; commoner in fall than spring and much commoner in the 90s than today. Locally known as "Gray-back." Extreme dates: Mar. 18, 1928 (with Edwards); April 30, 1921 to May 30, 1924; July 14, 1921 to Oct. 6, 1929. Spring dates fragmentary; average occurrence in fall, July 18 to Sept. 22. Day's maximum each month: Mar., 18 (2 flocks); Apr., 3; May, 5; July, 5; Aug., 11; Sept., 75 (1928); Oct., 25 (1929). Average high counts (not including 1928 and 1929 records): spring, 4; fall, 8. Frequency maximum: seen on 18 trips in 1928 when a decided increase was noted in September and early October.

Pisobia fuscicollis. White-rumped Sandpiper.—Formerly rare transient, but increasing. Four spring records: May 19, 1927 and 1928, May 20, 1928 and June 10 (12 individuals). Five fall records to 1928 (one W. F. Eaton): July 20, 1919 to Sept. 3, 1917 and Oct. 6, 1929. Heavy late flight in 1929. Day's maximum each month: May, 2 (12 in 1928); July, 2; Aug., 5 (14 in 1928); Sept., 2 (25 in 1928); Oct., 400 (1929). Frequency maximum: seen on 7 trips 1928.

Pisobia bairdi. Baird's Sandpiper.—Very rare transient. First record Aug. 23, 1923. This bird was studied at close range with other small and medium sized shore birds. It reminds mostly of a White-rump, though more buffy, body not so slender and without the white rump. Under parts not as dark as Pectoral on breast and more buffy. In 1928 several records: Sept. 1, 2 birds (Edwards); Sept. 15, 1 bird (Kuerzi); Sept. 29, 1 bird (Eaton). Three seen in 1929 (Edwards, Kassoy, Herbert and Hickey).

Pisobia minutilla. Least Sandpiper.—Much more abundant in the 90s, when the local salt marshes were wetter and more generally mowed, than today, though still common and now probably increasing. Extreme dates: May 8, 1926 to June 12, 1926; June 30, 1929 to Oct. 12, 1926. Average occurrence: May 14 to June 4; July 11 to Sept. 26. Day's maximum each month: May, 200; June, 6; July, 40

(200 in 1928): Aug., 50; Sept., 60; Oct., 3. Average high counts (not including 1928): spring, 63; fall, 35. Frequency maximum: seen on 19 trips in 1928.

Pelidna alpina sakhalina. Red-backed Sandpiper.—Transient; usually rare, but probably increasing. Four spring records: May 19, 1928 to June 10, 1928. Eight fall records to 1928: Oct. 2, 1921 to Nov. 5, 1922 and probably Nov. 6, 1927; a freshly killed bird found on tide ice Jan. 30, 1927. Increase in fall of 1928—7 records. Day's maximum each month: June, 1 (3 in 1928); Oct., 23 (50 in 1929); Nov., 40. Average high counts to 1928: fall, 12.

Ereunetes pusillus. Semipalmated Sandpiper.—Transient. By far the most abundant shore bird locally and still increasing. Probably more abundant now than in the 90s when it was persistently shot. Extreme dates: May 1, 1926 to June 18, 1921; July 3, 1925 to Oct. 30, 1927. Average occurrence: May 6 to June 4; July 11 to Oct. 14. Day's maximum each month: May, 250; June, 300; July, 3,000 (5,000 in 1928); Aug., 4,000 (6,000 in 1928); Sept., 800; Oct., 75 (1,100 in 1929). Average high counts to 1928: spring, 83; fall, 1,800. Frequency maximum: seen on 26 trips in 1928. [My local dates as here used give an earlier average arrival date for this species than for Least Sandpiper which is contrary to the normal sequence of the two species as observed in most localities where both occur.]

Ereunetes mauri. Western Sandpiper.—I believe this bird a commoner local migrant than I previously supposed. There were two sight identifications which seemed to me satisfactory up to 1928 when the species became quite regular, there being numerous records that year, one being collected. In all cases the much longer bill (probably females), compared with the different lengths of the bills of male and female Semipalmated, could be seen and in several records the rusty feathers on back or the lighter head. Dates July 7, 1929 to Oct. 6, 1929.

Calidris leucophæa. Sanderling.—Formerly rare transient. Two records up to 1928—Oct. 9, 1921 and Sept. 24, 1927. In 1928 an unusual increase; observed on 8 dates, from July 22 to Oct. 28, with a maximum of 17 on Sept. 3 (Eaton).

Limosa fedoa. Marbled Godwit.—Credit for the discovery of this species on the Newark—Elizabeth marsh goes to James L. Edwards of Montclair, who on Aug. 22 and 24, 1928, found one bird, and carefully identified it, on the Essex County end of the marsh. The writer, with Mr. Edwards, found two individuals in the same locality on Aug. 29, these flying from the Union County to the Essex County sides of Bound Creek, later to be studied at close range in company with Greater Yellow-legs. Several other members of Linnæan Society also had opportunity to see the pair on Aug. 29, Aug. 31 and Sept. 1. One Sept. 15, 1929 (Hickey, Herbert and Kassoy); also Sept. 18.

Limosa hæmastica. Hudsonian Godwit.—A single bird in breeding plumage, with prominent field marks well seen, flew close to me over Bay Pond on the local salt marsh on July 3, 1925—an unusual date and an unusual bird. In 1928 two seen by Ralph Friedman Aug. 31; two by W. F. Eaton Sept. 29; same two Sept. 30 by Edwards and the writer and two more by Edwards Oct. 13. Latter of uniform size while those seen Sept. 29 and 30 showed a decided difference.

Totanus melanoleucus. Greater Yellow-legs.—Increasingly common spring transient. Up to 1928 present in smaller numbers in late summer and fall; 1928-1929 fall flight much heavier. Extreme dates: spring, March 18, 1928; April 7,

1923 to June 17, 1922. In 1921 recorded June 18 (1); June 25 (2); July 2 (2 in same locality); July 9 (1); July 14 (1). In 1929 one June 22 and one June 30. Except for these records extreme fall dates were July 8, 1926 to Nov. 14, 1925. Average occurrences (not including 1928 and 1929 record): April 10 to June 13; July 18 to Oct. 31. Day's maximum each month: April, 58; May, 250; June, 5; July, 10 (12 in 1928); Aug., 8 (175 in 1928); Sept., 12 (150 in 1928); Oct., 8; Nov., 6. Average high counts to 1928: spring, 87; fall, 7. Frequency maximum: seen on 24 trips in 1921. Rarely missed in spring on salt marsh during normal migration season. The large late August and early September flight of 1928 broke all recent records for the region.

Totanus flavipes. Lesser Yellow-legs.—Rare, but fairly regular in spring. Missed but one spring 1919 to 1927. Abundant in fall. Extreme dates: April 25, 1925 to May 10, 1925; June 30, 1929 to Nov. 1, 1927. Average occurrence (to 1927): April 29 to May 8; July 12 to Oct. 12. Day's maximum each month: April, 1; May, 1; June, 2; July, 150 (350 in 1928); Aug., 300 (Edwards) (450 in 1928); Sept., 15 (600 in 1929); Oct., 32; Nov., 1. A flock lingered during Oct., 1927, on the muddy bottom of the drained reservoir; last recorded Nov. 1. Weather unusually mild and feed conditions perfect. Average high counts (not including 1928): spring, 1; fall, 112. Frequency maximum: seen on 14 trips in 1922 and 23 trips in 1928. Rarely missed on salt marsh from July 15 through August. The 1928 flight surpassed all previous records.

Helodromas s. solitarius. Solitary Sandpiper.—Regular and well distributed migrant but never present in large numbers. Extreme dates: May 2, 1924 to May 26, 1918; July 8, 1923 to Oct. 16, 1921. Average occurrence: May 4 to May 21; July 20 to Oct. 6. Day's maximum each month: May, 13; July, 3; Aug., 6; Sept., 7; Oct., 4. Average high counts: spring, 7; fall, 6. Frequency maximum: seen on 13 trips in 1921.

Catoptrophorus s. semipalmatus. Willet.—Rare transient. Since 1916 no spring but several fall records: 1 on Sept. 11, 1925; 1 on Sept. 8, 1927, and 1 on Aug. 29, 1928; in 1929 1 July 21 to Sept. 29.

Bartramia longicauda. Upland Plover.—The increase in the records of this species on the local salt marsh since 1921 is one redeeming ornithological feature of the diking and ditching. In the late 90s and between 1900 and 1910 the species was occasionally seen by hunters and rarely taken in August. Since 1921, attracted by the extensive uninhabited stretches of the dry marsh and the big annual crop of grasshoppers, it has been present in irregular but increasing numbers. Recorded each year but one since 1921. Two spring records: April 3, 1926, and May 15, 1929 (Nelson). Fall records, extreme dates: June 30, 1929; July 11, 1928 to Sept. 25, 1927 (Edwards). Average occurrence to 1928: Aug. 1 to Sept. 6. Day's maximum each month: April, 1; May, 1; June, 4 (1929); July, 1; Aug., 15; Sept., 3. Average high counts to 1928: spring, .2; fall, 6. Frequency maximum: seen 5 trips in 1927 and recorded several more times by others; 9 times in 1928. Griscom reports LaRue K. Holmes finding 2 nesting pairs "near Summit" in 1904, though whether or not in Union County is not stated. One of the 4 birds June 30, 1929, on diked marsh in full song, and the May 15 bird the same year also singing in same locality which was not visited between those dates; probably bred.

Tryngites subruficollis. Buff-breasted Sandpiper.*§—This is another species added to the local list by James L. Edwards. A single bird seen with Black-bellied Plover on Sept. 9, 1928, at the Newark or Essex County end of the local salt marsh.

Actitis macularia. Spotted Sandpiper.—Summer resident. Extreme dates: April 16, 1922 to Oct. 8, 1916. Average occurrence: April 23 to Sept. 28. Day's maximum each month: April, 10; May, 20; June, 5; July, 8 (30 in 1929); Aug., 11; Sept., 4; Oct., 2. Average high counts to 1927: spring, 11; fall, 8. June average, salt marsh, .3; uplands, 1.9. Frequency maximum: seen on 32 trips in 1921. Rarely missed on upland trips from May 1 to mid-Sept.

Numenius hudsonicus. Hudsonian Curlew.—I had no definite local records for this species until Aug. 23, 1923, when a single bird was seen on the local salt marsh. In 1925, 1 on July 23. In 1927, when the species showed a marked increase all along the shore, there were several records; 9 seen by the writer Aug. 10; 3 Aug. 29 by Edwards and 6 seen in early September by M. S. Ley. Only one record in 1928—Sept. 1 (Kuerzi).

Squatarola squatarola. Black-bellied Plover.—Regular transient; more common in fall than spring. Some recent increase. Extreme dates since 1920: April 30, 1925 to June 5, 1926; Aug. 10, 1923 to Nov. 18, 1928. Average occurrence to 1928: spring records fragmentary; fall, Aug. 11 to Oct. 8. Day's maximum each month: Apr., 4; May, 1; Aug., 6 (8 in 1928); Sept., 24 (40 in 1928); Oct., 40; Nov., 6 (1928). Average high counts to 1928: spring, 2; fall, 15. Frequency maximum: seen on 6 trips in 1926 and 16 trips in 1928.

Charadrius d. dominicus. Golden Plover.—Transient. No spring records. In late 90s and up to 1904 common, becoming rather rare, but again increasing since 1920. Extreme dates since 1920: Aug. 4, 1921 to Nov. 14, 1926. Average occurrence: Sept. 2 to Oct. 18. Day's maximum each month: Aug., 6; Sept., 24 (93 in 1928); Oct., 87; Nov., 1. Average high counts to 1928: fall, 26. Frequency maximum: seen on 6 trips in 1926 and 10 trips in 1928.

Oxyechus vociferus. Killdeer.—Recorded every month but January. Holding its own as a breeder, possibly increasing slightly on salt marsh fill. Extreme dates: Feb. 8, 1925 to Dec. 19, 1926. Recorded only 2 years out of 12 in Feb. and Dec. Average occurrence: Mar. 5 to Nov. 21. Day's maximum each month: Feb., 1; Mar., 8; April, 5; May, 4; June, 5; July, 10 (50 in 1929); Aug., 30 (Eaton); Sept., 18; Oct., 19; Nov., 17; Dec., 6. Average high counts: spring, 6; fall, 20. June average, uplands, 1.7; salt marsh, .3. The monthly maxima indicate that the Killdeer in spring tends to fly directly to its breeding grounds—no resting transient flocks in March or April—while there is a more deliberate southward movement in the fall with a tendency to accumulate on good feeding grounds. Frequency maximum: seen on 27 trips in 1925.

Aegialitis semipalmata. Semipalmated Plover.—Very irregular transient with tendency to increase. Commoner in fall than spring. Extreme dates: May 10, 1925 to June 12, 1926; July 8, 1927 to Oct. 28, 1928. Average occurrence to 1928: May 22 to June 8; July 20 to Sept. 20. Day's maximum each month: May, 300; June, 5; July, 40 (150 in 1928); Aug., 1,200 (Eaton); Sept., 200 (1,000 in 1929); Oct., 1 (15 in 1928). Average high counts to 1928: spring, 53; fall, 222. Frequency maximum: seen on 11 trips in 1926 and 23 trips in 1928.

Aegialitis meloda. Piping Plover.—Rare transient. Three records on sand fill, salt marsh, May 19 and 20, 1928 (fog and rain); Aug. 10, 1927.

Arenaria interpres morinella. Turnstone.—Rare transient, but increasing records on salt marsh flats; May 19, 1928 (fog); May 20, 1928 (Edwards); July 28, 1926. Fall records 1928: Aug. 22 to Sept. 30; seen 7 times; maximum 7 Sept. 5. Three on Oct. 6, 1929.

Colinus v. virginianus. Bob-white.—Formerly locally common permanent resident. Since 1916 rare in northern portion of county. But 7 records since 1916 and all singles though others report a covey near Union in 1925 and 1926 and G. Bartram Woodruff flushed a covey at Kenilworth in the fall of 1927. June average: uplands, .1.

Bonasa u. umbellus. Ruffed Grouse.*—Formerly common in wooded portions of county. Now barely survives, though a very few may still persist in the least frequented sections of the trap rock ridges of the Orange Mountains. I had no Union County record from 1916 to 1929 when 1 was seen in June. W. DeWitt Miller has found it occasionally in the county in recent years, and I flushed two on the Second Ridge, Essex County Reservation, just outside Union County on Feb. 15, 1925.

Perdix perdix. Hungarian or European Gray Partridge.*—A covey of these introduced game birds appeared about Lyons Farms, near Elizabeth, in the fall of 1912. All were probably killed by hunters. For several years up to 1912 this species was liberated in numbers at various points in the state. It has failed to survive.

Phasianus colchicus or *Phasianus torquatus*. Pheasant.—This introduced species has found the damp, partially drained swamps, marshes and brush lands and the diked salt marshes of the county admirably suited to its needs. It has bred freely and, despite close hunting, with the yearly liberation of fresh supplies of cocks it has increased. In recent years it has been seen or heard on practically every upland field trip. Day's maximum each month: Jan., 14; Feb., 12; Mar., 12; Apr., 14; May, 16; June, 17; July, 25; Aug., 15; Sept., 25; Oct., 28; Nov., 14; Dec., 15. June average: uplands, 3.7; salt marsh, .3.

Ectopistes migratorius. Passenger Pigeon.—The last record of this bird in Union County that has come to my attention was a flock of some size, seen by the late Theo. C. English of Elizabeth in 1880. He knew the bird intimately in his boyhood.

Zenaidura macroura carolinensis. Mourning Dove.—Common breeder, though some decrease since 1921. Seen on practically every upland trip, April to October, inclusive. Extreme dates: Feb. 22, 1922 to Dec. 21, 1924. Average occurrence: Mar. 16 to Nov. 13. Day's maximum each month: Feb., 1; Mar., 8; April, 17; May, 10; June, 15; July, 60; Aug., 30; Sept., 25; Oct., 40; Nov., 9; Dec., 8. June average: 5. Frequency maximum: seen on 35 trips in 1921.

Cathartes aura septentrionalis. Turkey Vulture.*—Rare. Only one record up to 1923. Since then: 3 on May 11, 1923; 1 Mar. 29 and 2 June 21, 1925 and 1 June 12, 1927. The June records were near or over the trap rock ridges between Cranford and New Providence and there is a possibility that the species bred in or near Union County. June average, .15.

Circus hudsonius. Marsh Hawk.—Breeds on local salt marsh but decreasing as a breeder. Usually present all year. Less common in fall and winter than formerly. Years ago I counted as many as 20 at one time over the salt marsh in the fall. Day's maximum each month since 1916: Jan., 4; Feb., 6; March, 3; April, 4; May, 5; June, 10 (including young); July, 11; Aug., 6; Sept., 6; Oct., 7; Nov., 4; Dec., 4. Seen on almost every trip to salt marsh. Average high counts: spring, 3.5; fall, 5; winter, 4. June average: 2.

Accipiter velox. Sharp-shinned Hawk.—Rather uncommon permanent resident. Probably common as transient along trap rock ridges where others have observed large spring flights. Found breeding by W. DeWitt Miller in Plainfield region. Present in summer about Kenilworth. Day's maximum each month: Jan., 1; Feb., 1; March, 1; April, 1; May, 2; June, 1; July, 1; Aug., 1; Sept., 2; Oct., 1; Nov., 2; Dec., 2. No June records since 1920 in Northern Union County. Average high counts: spring, 1.; fall, 1.3. Frequency maximum: seen on 9 trips in 1919.

Accipiter cooperi. Cooper's Hawk.—Recorded in Elizabeth region in all months but June and July. Listed by Mr. Miller as a breeder in the Plainfield region. Day's maximum each month in Northern Union County: Jan., 1; Feb., 1; March, 1; April, 1; May, 1; Aug., 1; Sept., 1; Oct., 2. Average high counts: spring, 1; fall, 1.2. Frequency maximum: seen on 4 trips in 1923.

Astur a. atricapillus. Goshawk.—An adult shot in woods along salt marsh about 1895. One recorded Jan. 9 and 16, 1926, in Essex County Reservation, near Union County line. Scott collected 2 at South Orange, Dec. 13, 1896.

Buteo b. borealis. Red-tailed Hawk.—Sometimes common in winter; rare but occasional in summer. Extreme dates: Aug. 13, 1916 to April 19, 1924. Four, calling, over mountains west of Westfield on July 6, 1918, may have bred nearby. Average occurrence: Dec. 30 to April 6. Day's maximum each month: July, 4; Aug., 1; Oct., 1; Nov., 1; Dec., 2; Jan., 2; Feb., 8; March, 4; April, 1. Average high counts winter, 3. Frequency maximum: seen on 12 trips in 1922.

Buteo l. lineatus. Red-shouldered Hawk.—Permanent resident, decreasing as a breeder. Day's maximum each month: Jan., 4; Feb., 6; March, 26; April, 9; May, 3; June, 3; July, 2; Aug., 2; Sept., 4; Oct., 3; Nov., 3; Dec., 8. Average high counts: spring, 8.5; fall, 4. June average, .55. Frequency maximum: seen on 39 trips in 1921 and on but 20 in 1925. Further decrease since.

Buteo platypterus. Broad-winged Hawk.*—Irregular transient; uncommon summer resident. Probably passes along Orange Mountains each year in numbers as a migrant. Others have seen large flights. Extreme dates: April 22, 1926 to Oct. 12, 1923. Average occurrence: April 24 to Oct. 7. Day's maximum each month: April, 2; May, 2; June, 2; July, 1; Aug., 1; Sept., 1; Oct., 2. Probably bred on Kean estate, near Elizabeth in 1924 and in Essex County Reservation in 1927. Average high counts: spring, 1.8; fall, 1.2. June average, .15. Frequency maximum: seen on 6 trips in 1924.

Archibuteo lagopus sancti-johannis. Rough-legged Hawk.—Regular winter visitor on local salt meadows. Extreme dates: Oct. 24, 1925 to March 26, 1921. Average occurrence: Nov. 7 to March 21. Day's maximum each month: Oct., 1; Nov., 1; Dec., 1; Jan., 1; Feb., 2; March, 3. Average high count: winter, 1.5. Frequency maximum: seen on 10 trips in 1925.

Haliaeetus l. leucocephalus. Bald Eagle.—Occasional transient. Five records 1916 to 1927. Extreme dates: Sept. 4, 1916 to April 22, 1926.

Falco peregrinus anatum. Duck Hawk.—Regular on salt marsh where I have recorded it every month but December. Most records in spring from mid-March to mid-May and in fall from Sept. 15 to Oct. 30. Day's maximum each month: Jan., 1; Feb., 1; March, 1; April, 2; May, 1; June, 2; July, 1; Aug., 1; Sept., 1 (2 in 1929); Oct., 1 (3 in 1929); Nov., 1. Average high counts: spring, 1.2; fall, 1. June average, .13. Frequency maximum: seen on 5 trips in 1922.

Falco c. columbarius. Pigeon Hawk.—Uncommon transient. Extreme dates: April 13, 1919 to May 14, 1922; Sept. 1, 1928 to Oct. 23, 1927. Average occurrence: May 5 to 11; Sept. 14 to Oct. 1. Day's maximum each month: April, 1; May, 1; Sept., 2; Oct., 1. Average high counts: spring, 1.2; fall, 1.2. Frequency maximum: seen on 3 trips in 1921 and several trips in 1928.

Falco s. sparverius. Sparrow Hawk.—Common permanent resident. Day's maximum each month: Jan., 3; Feb., 6; March, 10; April, 4; May, 3; June, 6; July, 6; Aug., 6; Sept., 6; Oct., 4; Nov., 3; Dec., 4. Average high counts: spring, 5.5; fall, 6. June average, 1.5. Frequency maximum: seen on 61 trips in 1922.

Pandion haliaetus carolinensis. Fish Hawk.—Regular but not very common transient. Extreme dates: Mar. 22, 1925 to May 20, 1917; 1 record June 12, 1925; Aug. 10, 1921 to Oct. 13, 1918. Average occurrence: April 1 to May 12; Aug. 14 to Oct. 8. Day's maximum each month: March, 1; April, 2; May, 1; June, 1; Aug., 1; Sept., 1; Oct., 1. Average high counts: spring, 1.3; fall, 1. Frequency maximum: seen on 8 trips in 1921.

Aluco pratincola. Barn Owl.—The late Larue K. Holmes reported a nest found near Summit prior to 1906. Probably still a rare breeder. Observed years ago in Elizabeth church steeples in summer. Day's maximum each month: Jan., 1; Feb., 1; April, 1; Nov., 1; Dec., 1. Frequency maximum: seen on 6 trips in 1922.

Asio wilsonianus. Long-eared Owl.*—Irregularly abundant in winter; rare in summer. Found nesting in the county by W. De W. Miller and I have found the species occupying an old hawk's nest near Elizabeth in summer. Recorded by me every month but September and October. Day's maximum each month: Jan., 29; Feb., 7; March, 10; April, 1; May, 1; June, 1; July, 1; Aug., 1; Nov., 2; Dec., 1. Largest numbers January to mid-March. Average high counts: winter, 10.5. Frequency maximum: seen on 16 trips in 1922.

Asio flammeus. Short-eared Owl.—Permanent resident, though irregular in summer. Rarely but occasionally found as migrant on uplands where I have flushed it from evergreen groves in a nursery. Usually found only on salt marsh. Day's maximum each month: Jan., 4; Feb., 5; March, 7; April, 7; May, 5 adults, 8 young; June, 9 adults, 9 young; July, 7; Aug., 6; Sept., 10; Oct., 12; Nov., 8; Dec., 6. Mr. Milton S. Ley tells me of a large concentration of this species he found one fall in a field bordering the local salt marsh. He estimated over 100 individuals. June average, 2. Frequency maximum: seen on 36 trips in 1922 but on only 7 in 1927.

Strix v. varia. Barred Owl.*—Rare permanent resident. It doubtless has bred and probably still breeds rarely since it has been recorded during the breeding season. Recorded by me each month except August, September and October.

Day's maximum, 1. June average, .15. Frequency maximum: seen on 9 trips in 1923.

Cryptoglaux a. acadica. Saw-whet Owl.—Rather uncommon winter visitor. Extreme dates: Nov. 11, 1923 to April 7, 1926. Average occurrence: Nov. 26 to March 15. Day's maximum each month: Jan., 2; Feb., 1; March, 1; Nov., 1; Dec., 1. Average high count: winter, 1.2. Frequency maximum: seen on 3 trips in 1926.

Otus a. asio. Screech Owl.—Permanent resident, apparently commonest on outskirts of city. Day's maximum each month: Jan., 1; Feb., 1; March, 1; April, 1; May, 1; June, 2; July, 1; August, 3; Sept., 1; Oct., 2; Nov., 1; Dec., 2. June average, .4. Frequency maximum: seen on 13 trips in 1922.

Bubo v. virginianus. Great-horned Owl.*—I have only two records for the Elizabeth region—a bird in Essex County Reservation, Jan. 16, 1927, and one in woods along Cranford River Jan. 1, 1928 (also seen by Eaton). Probably formerly bred. Mr. Miller has recorded it in the County near Plainfield. A bird was shot by a Mr. Poole along Blue Brook near Feltville the latter part of 1925. Mr. G. Bartram Woodruff of Elizabeth recorded two near Echo Lake, May 1, 1927.

Nyctea nyctea. Snowy Owl.—Irregular on local salt marsh as a winter visitor. One bird Dec. 26, 1921 to April 1, 1922. Several records Nov. 12 to late Dec., 1926, maximum 2. Frequency maximum: seen on 10 trips in 1922.

Coccyzus a. americanus. Yellow-billed Cuckoo.—Irregularly common in summer. Extreme dates: May 8, 1927 to Oct. 16, 1927. Average occurrence: May 12 to Oct. 4. Day's maximum each month: May, 4; June, 6; July, 6; Aug., 7; Sept., 4; Oct., 1; June average, 2.2. Frequency maximum: seen on 20 trips in 1922.

Coccyzus erythrophthalmus. Black-billed Cuckoo.—Usually uncommon breeder. Extreme dates: May 8, 1927 to Oct. 12, 1927. Average occurrence: May 15 to Sept. 30. Day's maximum each month: May, 2; June, 4; July, 2; Aug., 4; Sept., 3; Oct., 1. June average, .6. Frequency maximum: seen on 7 trips in 1921.

Ceryle alcyon. Kingfisher.—Recorded every month but January. Two December and February records. Extreme dates: Feb. 22, 1922 to Dec. 19, 1927. Average occurrence: March 11 to Nov. 20. Decreasing as a breeder. Day's maximum each month: Feb., 1; March, 3; April, 5; May, 4; June, 3; July, 4; August, 6; Sept., 4; Oct., 2; Nov., 1; Dec., 1. June average, .6. Seen on 33 trips in 1921 and a decreasing number since.

Dryobates v. villosus. Hairy Woodpecker.—Permanent resident though usually commoner in winter. Day's maximum each month: Jan., 4; Feb., 3; March, 4; April, 4; May, 3; June, 4; July, 2; Aug., 2; Sept., 2; Oct., 5; Nov., 4; Dec., 4. June average, .9. Average high counts: summer, 2.5; winter, 4. Frequency maximum: seen on 39 trips in 1926.

Dryobates pubescens medianus. Downy Woodpecker.—Permanent resident, rarely missed on upland trips. Day's maximum each month: Jan, 14 (flock); Feb., 9; March, 7; April, 9; May, 5; June, 8; July, 5; Aug., 8; Sept., 12; Oct., 16; Nov., 9; Dec., 8. June average, 2. Average high counts: spring, 7; summer, 6; fall, 8; winter, 9.

Picoides arcticus. Arctic Three-toed Woodpecker.*—I have no doubt of the occurrence of this species in Union County in January and February, 1926, when it was recorded in several localities in Northern New Jersey, the nearest at Montclair, and when I believe I caught a glimpse of one through the trees on the Kean estate near Elizabeth. The bird flew from a dead conifer which had been freshly stripped of part of its bark in the characteristic manner followed by this species when feeding. This was on January 10th and on January 17th the same tree was found to have been almost completely stripped. On February 22 another dead conifer in the same locality was found freshly stripped, the chipped bark lying in quantity upon the snow.

Sphyrapicus v. varius. Yellow-bellied Sapsucker.—Rare in winter. Recorded as a transient more frequently in fall than spring. Extreme dates: Sept. 23, 1917 to May 14, 1916. Average fall arrival: Sept. 27; average spring departure: May 8. Day's maximum each month: Jan., 1; Feb., 1; March, 1; April, 1; May, 5; Sept., 1; Oct., 4; Nov., 1; Dec., 1. Average high counts: fall, 1.7; winter, .2; spring, 1.7. Frequency maximum: seen on 12 trips in 1916.

Melanerpes erythrocephalus. Red-headed Woodpecker.—Formerly common, but decreasing as breeder. Occasionally winters. In the early 90s this species nested in North Park, Elizabeth, and it was still nesting there in the same tree as late as 1923. Has also bred regularly but in decreasing numbers along Elizabeth River and on Kean estate. Starlings very destructive to eggs of this species and sometimes young were not successfully hatched until very late in summer. Day's maximum each month: Jan., 4; Feb., 2; March, 5; April, 5; May, 15; June, 9; July, 9; Aug., 9; Sept., 9; Oct., 3; Nov., 1; Dec., 3. Formerly recorded on practically every upland trip from early May to October. Now usually missed. June average, 1.9. Average high counts: winter, 2; spring, 8; summer, 6.5; fall, 7.5. Frequency maximum: seen on 33 trips in 1919.

Colaptes auratus luteus. Flicker.—Common summer resident. Quite rare in winter. From 1916 to 1927 recorded only 6 years in November, 6 years in December, 5 years in January and 3 years in February. When not wintering average occurrence March 13 to Oct. 18. Day's maximum each month: Jan., 4; Feb., 1; March, 25; April, 45; May, 28; June, 22; July, 25; Aug., 30; Sept., 30; Oct., 45; Nov., 3; Dec., 3. June average, 6. Average high counts: spring, 35; fall, 31. Rarely missed on an upland trip from mid-March to mid-October.

Antrostomus v. vociferus. Whip-poor-will.—Rare in immediate vicinity of Elizabeth. Present during 1927 breeding season along trap rock ridges in Union County and in Essex County Reservation. Recorded near Elizabeth April 30, 1919, May 3, 1924 and July 9, 1923. Along trap rock ridges May 19 and June 16, 3 singing birds. Holmes at Summit in 1906 classed it as "formerly a common summer resident, but not seen nor heard for many years up to 1906, when heard several times." June average, .15. Scott at South Orange collected it April 30, 1897; Aug. 25 and Sept. 13, 1896. Muller reported it at Rahway, April 20, 1927.

Chordeiles v. virginianus. Nighthawk.—Fairly regular but not common transient. Occasionally breeds. Extreme dates: May 13, 1923 to Sept. 17, 1922; also Oct. 4, 1921 (G. Bartram Woodruff). Average occurrence: May 15 to Sept. 13. Day's maximum each month: May, 3; June, 2; July, 1; Aug., 7; Sept., 8 (12

in 1929). June average, .2. Average high counts: spring, 1.2; fall, 5.5. Frequency maximum: seen on 6 trips in 1926.

Chaetura pelagica. Chimney Swift.—Common summer resident. Extreme dates: April 16, 1922 to Sept. 27, 1925. Scott collected one Oct. 8, 1896. Average occurrence: April 22 to Sept. 16. In 1924 a flock of migrating Swifts was seen flying north across the local salt marsh on May 30. Day's maximum each month: April, 3; May, 75; June, 30; July, 35; Aug., 20; Sept., 20. June average, 13.5. Average high counts: spring, 53; fall, 19. Rarely missed on uplands between early May and Sept. 1. Rarely recorded over local salt marsh.

Archilochus colubris. Ruby-throated Hummingbird.—Regular, but not common transient and apparently decreasing as a breeder. Formerly bred within Elizabeth city limits but no recent breeding season record. Extreme dates: May 18, 1923 to Sept. 30, 1923. Average occurrence: May 23 to Sept. 19. Day's maximum each month: June, 1; July, 2; Aug., 3; Sept., 5. June average, .05. Average high counts: spring, 1; fall, 3. Frequency maximum: seen on 3 trips various years.

Tyrannus tyrannus. Kingbird.—Common summer resident. Extreme dates: May 4, 1919 to Sept. 17, 1919. Average occurrence: May 6 to Sept. 5. Day's maximum: May, 10; June, 15; July, 13; Aug., 35; Sept., 3. June average, 4.6. Average high counts: spring, 10; fall, 20. The June maxima four years out of twelve have exceeded those of May and my observations on areas where breeding birds have been counted carefully have indicated the presence of migrants well into June. Rarely missed on upland trips from mid-May to late August.

Myiarchus crinitus. Crested Flycatcher.—Common summer resident. Extreme dates: May 3, 1927 to Oct. 10, 1926. Average occurrence: May 5 to Sept. 7. Day's maximum each month: May, 13; June, 9; July, 9; Aug., 12; Sept., 6; Oct., 1. Seen later than Sept. 1 eight years out of twelve. June average, 4.6. Rarely missed on upland trips in season.

Sayornis phæbe. Phoebe.—Common transient; not common and decreasing as breeder near Elizabeth though still breeds commonly in suitable localities in western half of county. Extreme dates: March 13, 1921 to Nov. 18, 1928. Average occurrence to 1928: March 23 to Nov. 1. Day's maximum each month: March, 18; April, 22; May, 6; June, 8; July, 4; Aug., 9; Sept., 18; Oct., 35; Nov., 1. June average, 1.2. Average high counts: spring, 17; fall, 17.

Nuttallornis borealis. Olive-sided Flycatcher.—Uncommon and irregular transient. Spring record May 23, 1920, also May 24 (G. Bartram Woodruff); six fall records, all singles: Aug. 29, 1920 to Sept. 20, 1925.

Myiochanes virens. Wood Pewee.—Uncommon breeder in immediate vicinity of Elizabeth, though common in woodlands of western part of county. Extreme dates: May 12, 1918 to Oct. 7, 1917. Average occurrence: May 16 to Sept. 26. Unrecorded until June two years out of twelve. Recorded in October four years out of twelve. Day's maximum each month: May, 20; June, 11; July, 5; Aug., 4; Sept., 6; Oct., 1. June average, 1.4. Frequency maximum: seen on 12 trips in 1923.

Empidonax flaviventris. Yellow-bellied Flycatcher.*—Transient, probably commoner than my records indicate. Extreme dates: May 15, 1925 to June 5,

1927; Aug. 14, 1896 (Scott) to Sept. 14, 1919. Average spring arrival May 21. Only 10 definite spring and 4 definite fall records in 12 years. Day's maximum each month: May, 2; June, 1; Aug., 1; Sept., 2. Frequency maximum: seen on 4 trips in 1919.

Empidonax virescens. Acadian Flycatcher.[†]—Never recorded by me in Union County, but recorded by W. DeW. Miller in the Plainfield region where he formerly found it breeding. No recent breeding records.

Empidonax traillii alnorum. Alder Flycatcher.*—Locally common breeder in Alder swamps. Extreme dates: May 15, 1925 to Sept. 4, 1921, and small unidentified flycatchers have been seen in the Alder's breeding haunts later in the fall. Average arrival May 21. Departure dates not adequately indicated by my records. Day's maximum each month: May, 9; June, 4; July, 2; Aug., 1; Sept., 1. June average, 1. Average high count: spring, 4. Frequency maximum: seen on 10 trips in 1921.

Empidonax minimus. Least Flycatcher.—The species has decreased as a breeder. Formerly (in middle 90s) bred commonly within the city limits of Elizabeth where depredations by English Sparrows and parasites or disease which attacked the young in the nests, killed them off. Some 1927 indications of a slight increase in western part of county were not evidenced in 1928, but noted again in 1929. Extreme dates: April 30, 1922 to Sept. 24, 1927. Average spring arrival: May 6. Departure dates not adequately indicated by my records, but undoubtedly the species occurs here some years up to late September. Small unidentified flycatchers have been seen here as late as Oct. 8, 1922. Day's maximum each month: May, 6; June, 4; July, 4; Aug., 2; Sept., 4. June average, .7. Frequency maximum: seen on six trips in 1918.

Otocoris alpestris alpestris. Horned Lark.—Common, sometimes abundant, in winter on salt marsh; occasional on uplands. Extreme dates: Oct. 31, 1920 to April 10, 1927. [Birds not positively identified on Sept. 25, Oct. 9 and April 13, 1921, were possibly *praticola*.] Average occurrence: Nov. 5 to April 1. Day's maximum each month: Oct., 3; Nov., 75; Dec., 110; Jan., 100; Feb., 100; March, 26; April, 8. Rarely missed on salt marsh from November to mid-March. Average high count: winter, 83.

Otocoris alpestris praticola. Prairie Horned Lark.*—On Jan. 25, 1920, a flock of birds on the uplands was closely enough approached to be identified as this sub-species, as was a bird on Feb. 23, 1920.

Cyanocitta c. cristata. Blue Jay.—Common permanent resident; abundant on migration. Seen on practically every upland trip. As far as my recollection can be relied upon the species is commoner in Union County today than in the 90s. Winter population varies greatly with the pin-oak acorn crop. Day's maximum each month: Jan., 39; Feb., 34; March, 45; April, 25; May, 25; June, 16; July, 21; Aug., 28; Sept., 100; Oct., 60; Nov., 45; Dec., 37. June average, 5.7. Average high counts: fall, 55; spring, 31.

Corvus b. brachyrhynchos. Crow.—Permanent resident, decreasing as a breeder near Elizabeth; fairly constant in summer elsewhere in county. Winter population much smaller than in 80s and 90s when vast numbers were present, concentrating in rookeries about Fanwood and Scotch Plains, many resorting daily

to the salt marshes where they were attracted by the many muskrat carcasses discarded by trappers. The spring migration is always well marked, ranging from early February to late March according to weather conditions. For twelve years a spring flight has followed a direct northerly route, passing over my home at 613 Cleveland Ave., Elizabeth, the breadth of this route rarely exceeding one-quarter mile and usually much narrower. The fall flight south does not follow the same route, in fact seems more haphazard. It usually occurs the latter half of October or early in November. Day's maximum each month: Jan., 24; Feb., 150; March, 260; April, 45 (this in 1919; now rarely over 10 seen in one day about Elizabeth in April); May, 75 (flock); June, 29; July, 14; Aug., 15; Sept., 20; Oct., 125; Nov., 115; Dec., 320 (flock wintering in swamp about garbage dumps near Cranford in 1924). June average, 9. Rarely missed on upland trips. Average high counts: spring, 173; fall, 78.

Corvus ossifragus. Fish Crow.—Rare in fall and winter; occasionally breeds. I have found it nesting on the Kean estate on outskirts of Elizabeth, and on "islands" on salt marsh. Usually arrives the latter part of March and not often seen after late June. Day's maximum each month: Jan., 4; Feb., 4; March, 6; April, 4; May, 5; June, 2; July, 2; Nov., 3. June average, uplands, .8. Frequency maximum: seen on 16 trips in 1925.

Sturnus vulgaris. Starling.—First identified by me in Elizabeth in the spring of 1899, but seen in 1898 by W. DeW. Miller at Plainfield. Increasing, though severe winters with much ice and snow, as in 1917-1918 and 1919-1920, cause heavy mortality and are followed by reduced numbers. Since the species nests early and often, it recovers rapidly. Some evidence of a fall migration southward, usually in late September when large flocks associate with the migrating Grackle, but no certain evidence of a return movement in spring. Day's maximum each month: Jan., 400; Feb., 700; March, 100; April, 200; May, 100; June, 225; July, 152; Aug., 200; Sept., 2,500; Oct., 500; Nov., 300; Dec., 1,500 (about a garbage dump). June average, 34. Average high count: spring, 240; fall, 1,130. Seen on practically every upland trip.

Dolichonyx oryzivorus. Bobolink.—In 1906 Holmes at Summit reported the bird "apparently decreasing." It seems to be decreasing as a breeder on the uplands about Elizabeth, probably in part because there is less suitable country. It has, on the whole, increased as a breeder on the local salt marsh where it has extended its range with the diking and ditching and where it breeds in very irregular numbers, a high count year being followed, like as not, by a year or more of smaller numbers, a not easily explained sequence which I have observed in other species also, possibly caused by dispersal following overcrowding. Extreme dates: May 4, 1919 to Oct. 22, 1922. Average occurrence: May 6 to Oct. 9. Day's maximum each month: May, 30; June, 20; July, 30; Aug., 40; Sept., 25; Oct., 5. June average: salt marsh, 13; uplands, 1+. Rarely missed in season on salt marsh. Seen on 36 trips in 1921.

Molothrus a. ater. Cowbird.—Common summer resident, not decreasing as breeder. Extreme dates: March 5, 1921 to Dec. 26, 1921. Average occurrence: March 12 to Nov. 20. Day's maximum each month: March, 200; April, 75; May, 65; June, 12; July, 10; Aug., 200; Sept., 500; Oct., 600; Nov., 400; Dec., 1. June

average, 5. Average high counts: spring, 130; fall, 350. Frequency maximum: seen on 34 trips in 1921.

Agelaius p. phæniceus. Red-winged Blackbird.—Common, but decreasing, summer resident. Extreme dates: Feb. 12, 1918 to Dec. 10, 1916. Average occurrence: Feb. 21 to Nov. 29. Day's maximum each month: Feb., 35; March, 400; April, 125; May, 78; June, 45; July, 125; Aug., 300; Sept., 500; Oct., 400; Nov., 200; Dec., 8. June average: salt marsh, 22; uplands, 8. Average high counts: spring, 220; fall, 320. Frequency maximum: seen on 63 trips in 1922.

Sturnella m. magna. Meadowlark.—Permanent resident, commoner on salt marsh, where it always breeds in numbers and winters, than on uplands near Elizabeth where it breeds scatteringly and where it is seldom found after November. Day's maximum each month: Jan., 58; Feb., 50; March, 60; April, 58; May, 32; June, 30; July, 25; Aug., 30; Sept., 40; Oct., 55; Nov., 30; Dec., 30. June average: salt marsh, 17; uplands, 6. Average high counts: spring, 40; fall, 37; winter, 34.

Icterus spurius. Orchard Oriole.—Summer resident, not common. Extreme dates: May 6, 1920 to Aug. 31, 1919. Average occurrence: May 11 to July 21. On two occasions birds have lingered into August; one in 1919 was seen on three consecutive weeks up to August 31; another in same locality remained until August 14, 1921. Day's maximum each month: May, 2; June, 3; July, 3; Aug., 1. June average, 1.5. Frequency maximum: seen on 11 trips in 1921.

Icterus galbula. Baltimore Oriole.—Decreasing about Elizabeth but still common in western part of county. Extreme dates: April 30, 1925 to Oct. 3, 1920. Average occurrence: May 4 to Sept. 27. Day's maximum each month: May, 19; June, 10; July, 13 (latter about Westfield; rarely over 3 now seen on 1 trip in July about Elizabeth); Aug., 6; Sept., 3; Oct., 1. June average, 3. Average high counts: spring, 12; fall, 5. Frequency maximum: seen on 18 trips in 1920.

Euphagus carolinus. Rusty Blackbird.—Regular, but not very abundant transient. Extreme dates: Feb. 27, 1927 to May 8, 1927; Oct. 2, 1927 to Nov. 22, 1925. Average occurrence: March 16 to April 22; Oct. 6 to Nov. 9. Day's maximum each month: Feb., 5; March, 50; April, 25; May, 10; Oct., 25; Nov., 25. Average high counts: spring, 22; fall, 21. Frequency maximum: seen on 6 trips in 1924.

Quiscalus quiscula quiscula. Purple Grackle; and

Quiscalus quiscula æneus. Bronzed Grackle.—The Purple Grackle is a common breeder and transient; the Bronzed a very common transient, though I have never satisfactorily differentiated the relative proportions of the two in the migrating flocks. I have satisfactorily identified the Purple in October and I believe also in November (Scott collected it Nov. 9-18, 1896); but in the latter month most of the birds identified have been Bronzed. The earliest birds to arrive I have always found to be the locally nesting Purples. Extreme dates (collectively): Feb. 12, 1920 to Dec. 10, 1922. Average occurrence: Feb. 24 to Dec. 4. Day's maximum: Feb., 275; March, 3,000; April, 220; May, 120; June, 75; July, 160; August, 150; Sept., 2,000; Oct., 1,500; Nov., 2,000; Dec., 30. June average, 8. Average high counts: spring, 1,300; fall, 1,400. Frequency maximum: seen on 40 trips in 1922.

Hesperiphona v. vespertina. Evening Grosbeak.*—Rare winter visitor. Four records in Elizabeth region: A flock Dec. 31, 1916; flock Feb. 23, 1920; 1 bird Jan. 16 and Feb. 6, 1927; 1 bird Jan. 26, 1930.

Pinicola enucleator leucura. Pine Grosbeak.—Mr. Miller has recorded it near Plainfield from Dec. 31, 1916 to Feb. 11, 1917, and there are several earlier records for what is now Essex County Reservation. W. F. Eaton found it there Dec. 22, 1929, and on Jan. 5, 1930, I found 40 in the Reservation and 5 flying over the local salt marsh.

Passer domesticus. House Sparrow.—Permanent resident. Day's maximum each month: Jan., 60; Feb., 50; March, 60; April, 57; May, 100; June, 55; July, 100; Aug., 350; Sept., 100; Oct., 75; Nov., 75; Dec., 100. Never missed on upland trips: Many appear early in summer on local salt marsh where they feed upon grasshoppers from June to September. Some decrease since 1920. April average, 17.

Carpodacus p. purpureus. Purple Finch.—Irregularly common transient and winter visitor. Extreme dates: Sept. 3, 1916 to May 20, 1917. Average occurrence: Sept. 19 to May 12. Day's maximum each month: Sept., 6; Oct., 25; Nov., 40; Dec., 46; Jan., 25; Feb., 12; March, 100; April, 16; May, 35. Average high counts: spring, 38; fall, 25.

Loxia curvirostra minor. American Crossbill.*—Rare, occurring occasionally in late fall and winter. Extreme dates: Oct. 17, 1896 (Scott); Nov. 19, 1916 to Jan. 25, 1920. Day's maximum each month: Nov., 8; Dec., 1; Jan., 5. Only 10 records from 1916 to 1927. Frequency maximum: seen on 4 trips in 1919.

Loxia leucoptera. White-winged Crossbill.†—No record from Elizabeth region. Miller had numerous records around Plainfield winter of 1899-1900.

Acanthis linaria linaria. Redpoll.—Irregular in winter. Recorded in Elizabeth region seven years out of twelve. Extreme dates: Oct. 18, 1925 to March 21, 1920. Average occurrence: Nov. 4 [obtained by averaging 2 Oct. and 2 Dec. records] to March 17. Day's maximum each month: Oct., 75 (unusually early for a large flock); Nov., no record; Dec., 75; Jan., 24; Feb., 70; March, 60. Average high counts: winter season, 48. Frequency maximum: seen on 8 trips in 1920.

Astragalinus t. tristis. Goldfinch.—Permanent resident. Day's maximum each month: Jan., 60; Feb., 75; March, 65; April, 150; May, 130; June, 20; July, 40; Aug., 15; Sept., 60; Oct., 75; Nov., 100; Dec., 30. Rarely missed on upland trips except in winter when it is sometimes rather scarce. June average, 6. Average high count: spring, 75; fall, 55.

Spinus pinus. Pine Siskin.—Transient and winter visitor. Recorded 8 out of 12 years. Extreme dates: Oct. 4, 1925 to May 9, 1920. Average occurrence: Nov. 1 to April 4. Day's maximum each month: Oct., 120; Nov., 300; Dec., 28; Jan., 14; Feb., 15; March, 1; April, no record; May, 1. Average high counts, 75. Frequency maximum: seen on 11 trips in 1923.

Plectrophenax n. nivalis. Snow Bunting.—Regular in winter on salt marsh, rare on uplands. Extreme dates: Nov. 6, 1921 to March 18 1922. Average occurrence: Nov. 6 to Feb. 25. Day's maximum each month: Nov., 30; Dec., 25; Jan., 50; Feb., 93; March, 1. Average high counts, 32. Frequency maximum: seen on 14 trips in 1922.

Calcarius l. lapponicus. Lapland Longspur.—Rare winter visitor. Seen on salt marsh 5 years out of 7 from 1921 to 1927; also 1928 and 1929. Extreme dates: Nov. 14, 1926 to March 22, 1922 (latter record W. DeW. Miller). Average occurrence: Nov. 22 to Feb. 17. Day's maximum each month: Nov., 1; Dec., 1; Jan., 1; Feb., 5; March, 1. Frequency maximum: seen on 3 trips in 1921.

Poæcetes g. gramineus. Vesper Sparrow.—Tending to decrease as a summer resident, though occasional marked increases occur, as in 1920 and 1923. Extreme dates: March 27, 1921 to Dec. 21, 1919. Average occurrence: April 1 to Nov. 1. Day's maximum each month: March, 15; April, 54; May, 20; June, 12; July, 10; August, 6; Sept., 12; Oct., 20; Nov., 1; Dec., 1. June average, 3. Average high counts: spring, 40; fall, 12. Frequency maximum: seen on 31 trips in 1920.

Passerculus sandwichensis savanna. Savannah Sparrow.—Increasing; now ranks some years as a permanent resident. Has appeared as an increasing breeder since 1922 on diked sections of salt marsh where the salt hay is being crowded or killed out and coarser plants gain foothold. Migrants usually arrive in late March or early April. A few winter, but only one February record. Day's maximum each month: Jan., 6; Feb., 1; March, 6; April, 8; May, 5; June, 8 (25 June 30, 1929); July, 4; Aug., 3; Sept., 25; Oct., 100; Nov., 10; Dec., 2. June average to 1927, 2. Average high count: spring, 13; fall, 40; winter, 2.

Ammodramus savannarum australis. Grasshopper Sparrow.—Irregularly distributed breeder; rare in Elizabeth region and northern part of county, but common in southeastern section, about Tremley and Rahway. Extreme dates: April 7, 1918 to Nov. 5, 1924. Average occurrence not clearly indicated from my records. Usually not found near Elizabeth until the second week in May. Rarely more than one seen on a trip about Elizabeth (June maximum 4), but 10 or more can be heard on a trip from Rahway to Tremley. Day's maximum each month: April, 1; May, 3; June, 10; July, 10; Aug., 3; Sept., 1; Oct., 1; Nov., 1. June average, about Elizabeth, .6. Frequency maximum: seen on 11 trips in 1916.

Passerherbulus henslowi. Henslow's Sparrow.*—Mr. Miller stated that this species has bred in the Passaic Valley within the county limits. Only two records for the Elizabeth region: 1 Sept. 3, 1925 and 1 Oct. 12, 1923. A singing bird near New Providence, June 22, 1929.

Passerherbulus caudacutus. Sharp-tailed Sparrow.—Abundant, but decreasing breeder on salt marsh (some recovery 1928-1929). Decreasing on diked and drier portions. Occasional in winter. Rarely occurs in numbers until mid-May, sometimes not until late May, though several April records. Day's maximum each month: Jan., 3; Feb., 1; March, no record; April, 2; May, 60; June, 95; July, 80; Aug., 50; Sept., 40; Oct., 150; Nov., 8; Dec., 2. June average, salt marsh, 38. Frequency maximum: seen on 35 trips in 1922.

Passerherbulus nelsoni nelsoni. Nelson's Sharp-tailed Sparrow.—Probably a more frequent migrant on local salt marsh than my records indicate. One bird identified to my satisfaction Oct. 1, 1922. I gave the Sharp-tails special attention in 1922 and I had familiarized myself with the field marks of all three races when I located this individual, in bright plumage, noting the clear demarcation of the light stripes on the back, the buff tone of throat and breast and the indistinct streaks on breast.

Passerherbulus nelsoni subvirgatus. Acadian Sharp-tailed Sparrow.—Probably regular as a transient, but rather difficult to observe. One record, May 21, 1922. Another on salt marsh Sept. 30, 1928 (Peterson).

Passerherbulus m. maritimus. Seaside Sparrow.—Regular breeder on limited areas on salt marsh near Newark Bay, but decreasing. Extreme dates: April 18, 1926 to Nov. 6, 1921; one record Jan. 4, 1925. Average occurrence: May 2 to Oct. 22. Day's maximum each month: Jan., 1; April, 2; May, 5; June, 8; July, 15; Aug., 10; Sept., 6; Oct., 40; Nov., 1. June average, 3. Average high counts: spring, 35; fall, 13. Frequency maximum: seen on 21 trips in 1925.

Chondestes grammacus grammacus. Lark Sparrow.—On Oct. 28, 1928, I found a sparrow on the local salt marsh which I identified as of this species. Stouter build than Song Sparrow, which was present for direct comparison. Tail well seen—dark, rounded, bordered by white, the white being more prominent on the rounded edges. Two buffy wing bars. General tone gray-brown. Head pattern well seen; colors not bright and bird was apparently a young of the year. Light line through center of crown, over and under eye. Throat white, but breast very lightly streaked, another indication of immaturity. Spot on breast not conspicuous. Call note rather weak. Flight undulating.

Zonotrichia l. leucophrys. White-crowned Sparrow.—Transient. Extreme dates: May 7, 1922 to May 19, 1927, also May 20, 1928 (Edwards); Oct. 5, 1924 to Oct. 23, 1921. One record Feb. 12, 1916. Recorded in spring 5 years and in fall 9 years out of 12. Average occurrence: May 8 to 16; Oct. 9 to 21. Day's maximum each month: May, 2; Oct., 7. Average high counts: spring, 1+; fall, 3+. Frequency maximum: seen on 4 trips in 1922 and 1927.

Zonotrichia albicollis. White-throated Sparrow.—Common transient and winter visitor. Extreme dates: Sept. 11, 1923 to June 7, 1925; one record Aug. 18, 1925. Average occurrence: Sept. 16 to May 20. Day's maximum each month: Sept., 35; Oct., 350; Nov., 75; Dec., 21; Jan., 30; Feb., 25; March, 9; April, 30; May, 75; June, 1. Average high counts: fall, 196; winter, 18; spring, 56. Frequency maximum: seen on 36 trips in 1924.

Spizella m. monticola. Tree Sparrow.—Common winter visitor. Extreme dates: Oct. 12, 1919 to April 24, 1926. Average occurrence: Oct. 21 to April 13; usually last seen on salt marsh. Day's maximum each month: Oct., 16; Nov., 50; Dec., 160; Jan., 100; Feb., 120; March, 50; April, 4. Average high counts: winter, 100. Frequency maximum: seen on 36 trips in 1923.

Spizella p. passerina. Chipping Sparrow.—Decreasing as a breeder near Elizabeth and in some other parts of the county. Extreme dates: Feb. 13, 1916 and March 8, 1925 to Nov. 5, 1916. Average occurrence: March 22 to Oct. 30. Seen before April 1, 8 years out of 12. The March arrivals were I believe all locally nesting birds, in fact a bird that nested near my home up to 1925 had apparently a much earlier arrival date than other local breeders or transients. Excluding the February, 1916, birds which might have been wintering my average arrival date for the 12 years is April 1. Recorded in November 2 years out of 12. Day's maximum each month: Feb., 2; March, 2; April, 35; May, 75; June, 20 (not equalled since 1916); July, 8; Aug., 7; Sept., 30; Oct., 9; Nov., 1. June

average: uplands, 3. Average high counts: spring, 35; fall, 11. Frequency maximum: seen on 35 trips in 1916.

Spizella p. pusilla. Field Sparrow.—Common breeder and not rare in winter. Recorded 9 Decembers, 7 Januarys and 6 Februarys in 12 years. Usual arrival dates vary from March 19 to 25. Never found in early March unless wintering. Day's maximum each month: Jan., 15; Feb., 11; March, 25; April, 83; May, 60; June, 34; July, 35; Aug., 25; Sept., 24; Oct., 30; Nov., 19; Dec., 12. June average, 10. Average high counts: spring, 58; fall, 20; winter, 8. Frequency maximum: seen on 45 trips in 1921.

Junco h. hyemalis. Slate-colored Junco.—Abundant transient and usually common in winter. Extreme dates: Sept. 22, 1918 to May 6, 1917. Mr. Miller recorded it at Plainfield, May 13, 1917. Average occurrence: Sept. 28 to May 2. Day's maximum each month: Sept., 5; Oct., 170; Nov., 125; Dec., 92; Jan., 85; Feb., 190; March, 250; April, 225; May, 2. From Jan. 1 to Feb. 15 the usual number per trip is but 10 to 20. Average high counts: fall, 104; mid-winter, 55; spring, 125. Frequency maximum: seen on 37 trips in 1922. [A peculiarly colored Junco was seen in a flock of normal Juncos on Feb. 4, 1917. The head was unusually light in color, except the lores and regions about the eyes which were very dark. The back and scapulars as well as the throat and breast had a very decided tinge of red or rose, very different from the brownish color of the young birds.]

Melospiza m. melodia. Song Sparrow.—Very generally distributed, except in thick woodland. Heaviest migrations usually in March and October. Day's maximum each month: Jan., 53; Feb., 130; March, 225; April, 175; May, 70; June, 125; July, 90; Aug., 78; Sept., 85; Oct., 250; Nov., 125; Dec., 60. June average, 46. Average high counts: fall, 196; mid-winter, 31; spring, 221. Seen on practically every upland trip and on most trips to the salt marsh.

Melospiza l. lincolni. Lincoln's Sparrow.—Rather rare, but probably regular transient. One spring record May 19, 1927, 3 individuals (Griscom). Two fall records, Sept. 24, 1922 and Oct. 23, 1926. Maximum, 1. Scott collected one at South Orange, Sept. 24, 1896; Mr. Miller found it regularly in Plainfield region during migration.

Melospiza georgiana. Swamp Sparrow.—Common summer resident in suitable fresh water swamps. Formerly abundant, now rather uncommon on brackish portions of salt marsh where decrease is probably due to ditching and diking. A few winter. Migrants usually arrive the first half of April and the fall movement is heaviest in October. Day's maximum each month, 1922 to 1927: Jan., 2; Feb., 1; March, 2; April, 16; May, 20; June, 15; July, 20; Aug., 15; Sept., 4; Oct., 50; Nov., 20; Dec., 2. June average: uplands, 6; salt marsh, 4. Prior to 1921 June salt marsh trips frequently netted totals of over 50 and sometimes over 100. Average high counts: spring, 36; fall, 40; mid-winter, 1+. Rarely missed about swamps from mid-April to early November.

Passerella i. iliaca. Fox Sparrow.—Common transient; sometimes winters. From 1916 to 1927 present in December 7 years; in January 5 years and in February 5 years. Extreme dates: Oct. 12, 1923 to April 17, 1927. Average arrival date 6 years when no winter record, March 8; average spring departure, April 11. Average fall arrival, Oct. 20; average fall departure when not wintering, Dec. 1.

Day's maximum each month: Jan., 2; Feb., 12; March, 175; April., 60 (very unusual); Oct., 4; Nov., 100; Dec., 4. Average high counts: fall, 73; mid-winter, 1; spring, 82. Frequency maximum: seen on 18 trips in 1922.

Pipilo e. erythrophthalmus. Towhee.—Abundant transient, and common summer resident, though breeds only sparingly in immediate vicinity of Elizabeth. Rare in winter. Extreme dates: April 10, 1921 and 1927 to Nov. 28, 1928; one bird up to Jan. 1, 1925. Average occurrence: April 14 to Nov. 5. Day's maximum each month: April, 25; May, 30; June, 23; July, 16; Aug., 30; Sept., 10; Oct., 18; Nov., 1; Dec., 1; Jan., 1. June average, 9. Average high counts: spring, 29; fall, 14. Frequency maximum: seen on 26 trips in 1924.

Cardinalis c. cardinalis. Cardinal.—Scattered permanent resident along Cranford or Rahway River between Kenilworth and Milburn; also in Essex County Reservation. Rare in immediate vicinity of Elizabeth. Commoner toward Plainfield. Day's maximum each month: Jan., 6; Feb., 5; March, 3; April, 3; May, 3; June, 4; July, 4; Aug., 3; Sept., 2; Oct., 2; Nov., 3; Dec., 4. June average, .65. Frequency maximum: seen on 22 trips in 1924.

Zamelodia ludoviciana. Rose-breasted Grosbeak.—Decreasing and now rare as a breeder in immediate vicinity of Elizabeth; commoner in western portion of county. Extreme dates: May 1, 1922 to Oct. 2, 1927. Average occurrence: May 7 to Sept. 25. Day's maximum each month: May, 8; June, 3; July, 3; Aug., 4; Sept., 3; Oct., 1. June average, .65. Average high counts: spring, 5; fall, 2. Frequency maximum: seen on 11 trips in 1916.

Passerina cyanea. Indigo Bunting.—Decreasing summer resident in immediate vicinity of Elizabeth. Fairly common in west of county. Extreme dates May 4, 1927 to Oct. 5, 1919. Average occurrence: May 12 to Sept. 29. Day's maximum each month: May, 8; June, 14; July, 15; Aug., 8; Sept., 4; Oct., 6. June average, 4. Average high counts: spring, 6; fall, 5. Frequency maximum: seen on 20 trips in 1921.

Spiza americana. Dickcissel. §—A pair which bred and raised young was found in 1904 by W. DeW. Miller in the Plainfield region, within about one-half mile of the Union County line.

Piranga erythromelas. Scarlet Tanager.—Irregularly distributed summer resident; rare as a breeder in immediate vicinity of Elizabeth, but becomes common near and upon the trap rock ridges. Extreme dates: May 4, 1927 to Oct. 7, 1917. Average occurrence: May 7 to Oct. 1. Day's maximum each month: May, 20; June, 15; July, 10; Aug., 4; Sept., 2; Oct., 1. Highest counts along trap rock ridges. June average, 4. Average high counts: spring, 9; fall, 1.5. Frequency maximum: seen on 15 trips in 1921.

Progne s. subis. Purple Martin.—Has bred at Plainfield, N. J. (Miller). Rare about Elizabeth as a transient. My only record 1 on Aug. 31, 1920. One later reported from Newark meadows by members of Bronx County Bird Club.

Petrochelidon l. lunifrons. Cliff Swallow.—Irregular transient; rare in spring, occasional in fall. Extreme dates: April 25, 1920 to May 30, 1918; fall July 26, 1924 to Sept. 24, 1916. Average spring arrival: April 30. Day's maximum each month: April, 10; May, 15; July, 20; Aug., 30; Sept., 1. Average high count:

spring, 6; fall, 9. Frequency maximum: seen on 6 trips in 1922. H. H. Hans reported small colonies breeding near Summit in 1894 (Wilson Bul., 1905).

Hirundo erythrogastra. Barn Swallow.—Decreasing as summer resident about Elizabeth, as suitable nesting sites are destroyed. Still common elsewhere in county. Extreme dates: April 9, 1922 to Oct. 5, 1924. Average occurrence: April 16 to Sept. 27. Day's maximum each month: April, 50; May, 45; June, 30; July, 50; Aug., 75; Sept., 25; Oct., 3. June average, 7.5. Average high counts: spring, 29; fall, 40. Frequency maximum: seen on 36 trips in 1922.

Iridoprocne bicolor. Tree Swallow.—Abundant transient. But 23 days separate my latest spring and earliest return date, in fact in 1926 it is probable a pair would have bred in a hollow tree near Springfield (seen there about the hole June 6) if they had not been disturbed. Miller has recorded a bird feeding young near Chatham in 1921 not far from the county line. Extreme dates: March 31, 1917 to June 6, 1926; June 29, 1918 to Nov. 6, 1926. Average occurrence: April 7 to May 30; July 2 to Oct. 29. Day's maximum each month: March, 4; April, 40; May, 42; early June, 3; late June, 5; July, 1,200; Aug., 3,000; Sept., 2,500; Oct., 8,000; Nov., 3. Average high counts: spring, 25; fall, 3,250. Frequency maximum: seen on 33 trips in 1922.

Riparia riparia. Bank Swallow.—Regular transient. A single pair raised a brood in a sand bank near the Hummock swamp. I believe there had been more nests since there were some partly destroyed unoccupied holes. Sand digging had evidently disturbed them after nesting had started. Extreme dates: April 27, 1919 to Sept. 30, 1923, though casual after Sept. 10. Average occurrence: April 29 to Sept. 10. Day's maximum each month: April, 10; May, 7; June, 7; July, 20; Aug., 30; Sept., 2. June average, 1, but none now breeds. Average high counts: spring, 4; fall, 14. Frequency maximum: seen on 5 trips in 1919.

Stelgidopteryx serripennis. Rough-winged Swallow.—Decreasing as a breeder in Northern Union County. Extreme dates: April 25, 1920 to Aug. 25, 1916. Also two September records, on the 8th, 1918, and 10th, 1926, which are tentatively offered, awaiting the collection of a September specimen. I believe them correct. The bird seen Sept. 10, 1926, was observed both in flight and at rest with Tree Swallows. It was too large for a Bank and seemed too brown for a young Tree with which I could make direct comparison. Average occurrence. April 28 to Aug. 8. Recorded later than July 31 only 5 years in 12. Day's maximum each month: April, 5; May, 6; June, 7; July, 9; Aug., 2; Sept., tentative, 1. June average, .2. Frequency maximum: seen on 8 trips in 1920.

Bombycilla cedrorum. Cedar Waxwing.—Decreasing as a breeder about Elizabeth after some increase from 1918 to 1922. Extreme dates: March 25, 1923 to Oct. 30, 1921; also Jan. 9, 1916 and Feb. 8, 1925. Average occurrence: April 7 to Oct. 14. Day's maximum each month: Jan., 1; Feb., 28; March, 3; April, 40; May, 50; June, 15; July, 12; Aug., 50; Sept., 30; Oct., 20. Two pairs bred near Elizabeth in 1922 and 1923. No breeding record in the vicinity since. Average high count: spring, 27; fall, 24. Frequency maximum: seen on 12 trips in 1921.

Lanius borealis. Northern Shrike.—Irregular winter visitor. Seen 7 years out of 12. Extreme dates: Nov. 6, 1921 to April 7, 1918. In 12 years seen 2 Novembers, 2 Decembers, 5 Januarys, 2 Februarys, 2 Marchs and 2 Aprils. Aver-

age occurrence: Dec. 12 to March 15. Day's maximum each month: Nov., 1; Dec., 3; Jan., 2; Feb., 2; March, 1; April, 1. Average high count: winter, 1.3. Frequency maximum: seen on 7 trips in 1922.

Lanius ludovicianus migrans. Migrant Shrike.—One record, Sept. 3, 1917, near Elizabeth, was undoubtedly this species. At Plainfield Mr. Miller recorded it from August to January and also May 3, 1906.

Vireosylva olivacea. Red-eyed Vireo.—Common summer resident. Extreme dates: May 5, 1927 to Oct. 24, 1920. Average occurrence: May 8 to Oct. 11. Day's maximum each month: May, 30; June, 30; July, 18; Aug., 20; Sept., 11; Oct., 12. June average, 12. Average high counts: spring, 27; fall, 13. Frequency maximum: seen on 23 trips in 1921.

Vireosylva philadelphia. Philadelphia Vireo.*—Rare transient; one record in birch trees Sept. 20, 1925; another, same locality, Sept. 23, 1928.

Vireosylva g. gilva. Warbling Vireo.—Uncommon but some increase in breeding birds near Elizabeth since 1922. Extreme dates: May 4, 1927 to Oct. 10, 1926. In 1927 a singing bird was present in the poplar trees in front of my home each morning from July to Sept. 13 when the song ceased. Average occurrence: May 10 to Sept. 10. The average arrival is later than that figured for Red-eyed Vireo. [It is interesting to note that averaging all years in the 12 on which any were recorded the average arrival of Red-eyed Vireo is May 11 and Warbling Vireo May 14.] Day's maximum each month: May, 5; June, 4; July, 2; Aug., 2; Sept., 1; Oct., 1. June average, 1. Average high count: spring, 2.5; fall, 1.2. Frequency maximum: seen on 8 trips in 1923.

Lanivireo flavifrons. Yellow-throated Vireo.—Rare summer resident about Elizabeth; somewhat commoner in western part of county where I have noted some increase 1926, 1927 and 1928. Extreme dates: May 3, 1927 to Sept. 7, 1916; evidently casual Sept. 28, 1924 and Oct. 2, 1927; also recorded Oct. 6 (G. Bartram Woodruff). Average occurrence: May 7 to Sept. 10. Day's maximum each month: May, 6; June, 6; July, 1; Aug., 1; Sept., 2; Oct., 1. June average, 1. Recent increase noted as follows: June average, none in 1922; 2 in 1927. Average high counts: spring, 3.7; fall, .8. Frequency maximum: seen on 7 trips in 1924.

Lanivireo s. solitarius. Solitary Vireo.—Regular transient. Extreme spring dates: April 25, 1924 to May 18, 1923; fall Sept. 11, 1921 to Oct. 15, 1922. Average occurrence: April 28 to May 13; Sept. 25 to Oct. 12. Rarely very common. Day's maximum each month: April, 5; May, 4; Sept., 2; Oct., 6. Average high counts: spring, 3; fall, .2. Frequency maximum: seen on 7 trips in 1923.

Vireo g. griseus. White-eyed Vireo.—Local and not common as a breeder; probably decreasing. Extreme dates: May 4, 1923 to Oct. 2, 1927. Average occurrence: May 6 to Sept. 10. June average, 1.2. Day's maximum each month: May, 4; June, 4; July, 2; Aug., 1; Sept., 2; Oct., 1. Average high counts: spring, 3.5; fall, 1.3. Frequency maximum: seen on 10 trips in 1922.

Mniotilta varia. Black and White Warbler.—Common migrant; locally regular and common in summer, nesting chiefly on or near trap rock ridges. Extreme dates: April 23, 1926 to Oct. 19, 1924. Average occurrence: April 25 to Oct. 6. Day's maximum each month: April, 14; May, 24; June, 6; July, 4; Aug., 20; Sept., 6; Oct., 6. June average, 2.5. Average high counts: spring, 17; fall, 9.

Frequency maximum: seen on 18 trips in 1921. In 1906 Holmes at Summit reported it "rather rare."

Helmitheros vermivorus. Worm-eating Warbler.*—Very rare transient near Elizabeth, though it nests regularly and not uncommonly along wooded trap rock ridges. Extreme dates: May 6, 1924 to Aug. 14, 1921. Average occurrence: May 9 to Aug. 7, though departure dates fragmentary. Practically all birds observed were on breeding grounds. Day's maximum each month: May, 10; June, 10; July, 2; Aug., 2. June average, 1.7. Average high counts: spring, 4. Frequency maximum: seen on 6 trips in 1924. In 1896 Scott at South Orange collected 6 in July, indicating the species was as common on the ridge then as now.

Vermivora pinus. Blue-winged Warbler.—Common summer resident, well distributed. Extreme dates: April 27, 1921 to Sept. 17, 1916. Average occurrence: May 3 to Sept. 6. Day's maximum each month: April, 1; May, 25; June, 10; July, 7; Aug., 12; Sept., 3. June average, 5.6. Average high counts: spring, 17; fall, 8. Frequency maximum: seen on 18 trips in 1916. Scott at South Orange reported it "breeding, very common" in 1896.

Vermivora "leucobronchialis". Brewster's Warbler.*—Rare transient about Elizabeth; one record, May 18, 1923.

Vermivora "lawrencei". Lawrence's Warbler.*†—No record near Elizabeth. Collected near Maplewood. In the Plainfield region Mr. Miller has recorded it within the county limits.

Vermivora chrysoptera. Golden-winged Warbler.*—Rare transient about Elizabeth. Three spring records, May 15 to 28; two fall records, Aug. 14 to 24. Probably occurs as transient more frequently than my records show along trap rock ridges. Day's maximum each month: May, 1; Aug., 2. Frequency maximum: seen on 2 trips in 1921.

Vermivora r. rubricapilla. Nashville Warbler.—Regular but not especially common transient about Elizabeth. Extreme dates: May 3, 1924 to May 19, 1923; Aug. 18, 1925 to Oct. 14, 1923. Average occurrence: May 5 to 18; Aug. 26 to Oct. 3. Day's maximum each month: May, 6; Aug., 1; Sept., 5; Oct., 1. Average high counts: spring, 4; fall, 2. Frequency maximum: seen on 6 trips in 1923.

Vermivora c. celata. Orange-crowned Warbler.—Very rare transient. Two records: May 16, 1926, in Union County; May 19, 1927, in Essex County Reservation (Griscom).

Vermivora peregrina. Tennessee Warbler.*—Rare transient, not seen by me about Elizabeth until 1923 and not until 1928 heard singing in the region, an additional indication of local rarity. Four spring records: May 15, 1925 to June 3, 1928; one fall record, Sept. 30, 1923.

Compsothlypis americana usneæ. Northern Parula Warbler.—Common transient. Extreme dates: April 23, 1916 (Miller) to June 8, 1924; Aug. 24, 1921 to Oct. 14, 1917; (Oct. 14, 1896, Scott). Average occurrence: May 5 to 29; Sept. 3 to Oct. 12. Day's maximum each month: April, 1; May, 40; June, 1; Aug., 1; Sept., 22; Oct., 10. Average high counts: spring, 25; fall, 10. Frequency maximum: seen on 10 trips in 1923.

Dendroica tigrina. Cape May Warbler.—Fairly regular though seldom recognized in the fall. Extreme dates: May 8, 1927 (May 4, 1912 at Plainfield, by

Miller) to May 29, 1917; Sept. 26, 1926 to Oct. 17, 1925. Average occurrence in spring: May 12 to 22. Day's maximum each month: May, 3; Sept., 2; Oct., 1. Average high counts: spring, 2; fall, .7. Frequency maximum: seen on 3 trips in 1926.

Dendroica aestiva. Yellow Warbler.—Generally common summer resident. I recall a colony of about 50 nests of this species scattered through an alder swamp just outside Elizabeth. The species is commoner today near Elizabeth than in 1920-1922 when it became quite scarce as a breeder. Extreme dates: April 24, 1927 to Sept. 20, 1925. Average occurrence: May 1 to Sept. 4. Day's maximum each month: April, 1; May, 20; June, 11; July, 4; Aug., 3; Sept., 2. June average, 4.3. Average high counts: spring, 11; fall, 3. Frequency maximum: seen on 14 trips in 1921.

Dendroica c. caerulescens. Black-throated Blue Warbler.—Usually common transient in spring; less common in fall. Extreme dates: May 2, 1927 to May 31, 1926; Aug. 24, 1921 to Oct. 15, 1916; Oct. 16, 1896 (Scott). Average occurrence: May 6 to 25; Sept. 14 to Oct. 8. Day's maximum each month: May, 35; Aug., 1; Sept., 6; Oct., 6. Average high counts: spring, 17; fall, 3.7. Frequency maximum: seen on 9 trips in 1921.

Dendroica coronata. Myrtle Warbler.—Abundant transient; irregular, sometimes abundant, in winter along trap rock ridges in bayberry patches. Extreme dates: Sept. 8, 1918 to May 30, 1924. Average occurrence: Sept. 19 to May 24. Transients usually arrive in spring latter half of April. Day's maximum each month: Sept., 20; Oct., 90; Nov., 10; Dec., 6; Jan., 150 (flock back of Scotch Plains); Feb., 27; Mar., 30; April, 50; May, 80. Average high counts: spring, 63; fall, 73. Frequency maximum: seen on 26 trips in 1924.

Dendroica magnolia. Magnolia Warbler.—Common transient in spring; less commonly identified in fall. Extreme dates: April 30, 1925 to June 6, 1926; Aug. 10, 1923 to Oct. 14, 1923. Average occurrence: May 5 to June 1; Aug. 23 to Oct. 7. Day's maximum each month: April, 1; May, 40; June, 1; Aug., 2; Sept., 10; Oct., 3. Average high counts: spring, 20; fall, 5. Frequency maximum: seen on 11 trips in 1921.

Dendroica cerulea. Cerulean Warbler.*—Very rare transient. Three records: Sept. 18, 1921; Oct. 2, 1927; Sept. 23, 1928.

Dendroica pensylvanica. Chestnut-sided Warbler.—Rare summer resident near Elizabeth, but locally common along trap rock ridges, especially in part of Essex County Reservation. Common transient. Extreme dates: April 30, 1925 to Oct. 1, 1926. Average occurrence: May 3 to Sept. 8. Day's maximum each month: April, 1; May, 30; June, 10; July, 5; Aug., 4; Sept., 4; Oct., 1. June average, 2.6. Average high counts: spring, 17; fall, 3. Frequency maximum: seen on 14 trips in 1921.

Dendroica castanea. Bay-breasted Warbler.—Regular transient. Recorded 11 out of 12 springs. Scarcity of fall records due to lack of careful search and inability always to recognize it. Extreme dates: May 11, 1922 to May 30, 1924; Aug. 21, 1896 (Scott) to Oct. 12, 1925. Average occurrence: spring, May 16 to May 24. Day's maximum each month: May, 18; Oct., 1. Average high counts: spring, 7; fall, .3. Never seen on more than 2 trips a year.

Dendroica striata. Blackpoll Warbler.—Abundant transient. Extreme dates: May 8, 1927 to June 13, 1926; Sept. 3, 1916 to Oct. 27, 1918. Average occurrence: May 10 to June 7; Sept. 13 to Oct. 21. Day's maximum each month: May, 59; June, 75 (late migration in 1926); Sept., 50; Oct., 100. Average high counts: spring, 40; fall, 39. Frequency maximum: seen on 9 trips in 1922.

Dendroica dominica. Yellow-throated Warbler.*§—Casual. One record: Essex County Reservation, about half mile from Union County line, May 15, 1925.

Dendroica fusca. Blackburnian Warbler.—Regular in spring, but never very common about Elizabeth. Extreme dates: May 8, 1926 to May 30, 1918; Aug. 14, 1921 to Sept. 26, 1920. Average occurrence: spring, May 11 to 25; fall, Aug. 17 to Sept. 22. Day's maximum each month: May, 8; Aug., 1; Sept., 1. Average high counts: spring, 4; fall, 1. Frequency maximum: seen on 3 trips several years.

Dendroica virens. Black-throated Green Warbler.—Common transient. It is probable that a pair or two bred in an evergreen grove in Essex County Reservation in 1927 and 1928; 2 singing birds June 16. Present same locality June, 1928. Extreme dates: April 26, 1925 to June 10, 1917 and June 16, 1927 (no later trips to locality); Aug. 14, 1921 to Oct. 14, 1923. Average occurrence: April 28 to June 1; Aug. 25 to Oct. 10. Day's maximum each month: April, 12; May, 40; June, 2; Aug., 1; Sept., 10; Oct., 9. Average high counts: spring, 21; fall, 9. Frequency maximum: seen on 12 trips in 1921.

Dendroica vigorsii. Pine Warbler.*—Regular, but uncommon in spring; rare in fall. Extreme dates: March 18, 1923 to May 2, 1922; Sept. 25, 1921 to Sept. 29, 1896 (Scott). Average occurrence: spring, April 13 to 22. Day's maximum each month: March, 1; April, 2; May, 1; Sept., 1. Average high counts: spring, 1; fall, .2. Frequency maximum: seen on 2 trips in 1921.

Dendroica palmarum palmarum. Palm Warbler.—Not recognized until 1922. Since then 1 spring record May 11, 1923; common, sometimes abundant, in fall. Extreme dates: Sept. 23, 1923 to Oct. 21, 1923. A bird I recorded Sept. 10, 1916, as a Yellow Palm was undoubtedly this species. Average occurrence: fall, Sept. 25 to Oct. 14. Day's maximum each month: May, 1; Sept., 20; Oct., 3. Average high counts: spring, .2; fall, 6. Frequency maximum: seen on 6 trips in 1923.

Dendroica palmarum hypochrysea. Yellow Palm Warbler.—Common transient. Extreme dates: spring, April 1, 1917 to May 15, 1925; fall, Sept. 26, 1920 to Nov. 7, 1921. Average occurrence: April 9 to May 9; Sept. 30 to Oct. 30. Day's maximum each month: April, 75; May, 20; Sept., 5; Oct., 30; Nov., 1. Average high counts: spring, 25; fall, 11. Frequency maximum: seen on 10 trips in 1925.

Dendroica discolor. Prairie Warbler.—Increasing as a spring transient. Very rare in fall. Extreme dates: May 2, 1926 to May 23, 1920; fall, one record, Sept. 22, 1918. Average occurrence: spring, May 6 to 20. Day's maximum each month: May, 7; Sept., 1. Average high counts: spring, 5; fall, .2. Mr. Miller found it one of the rarest warblers at Plainfield, indicating that the flight of this species is up the coast. Frequency maximum: seen on 5 trips in 1924.

Seiurus aurocapillus. Ovenbird.—Abundant breeder in woods along and near the trap rock ridges, where Scott, in 1896, called it the "commonest warbler";

but uncommon in summer on uplands about Elizabeth. Extreme dates: April 24, 1927 to Oct. 27, 1918. Average occurrence: May 2 to Oct. 8. Day's maximum about Elizabeth: April, 1; May, 21; June, 6; July, 3; Aug., 2; Sept., 6; Oct., 4. June average about Elizabeth, .6; average high count during migration about Elizabeth: spring, 15; fall, 4. June average per trip along trap rock ridges, 20; high count, 64. June average, all trips, 5. Frequency maximum: seen on 24 trips in 1916.

Seiurus n. noveboracensis. Water Thrush.—Regular transient. Extreme dates: April 23, 1926 to June 6, 1926; July 26, 1924 to Oct. 23, 1921. Average occurrence: May 2 to May 26; Aug. 11 to Oct. 8. Day's maximum each month: April, 1; May, 5; June, 2; July, 3; Aug., 2; Sept., 5; Oct., 1. Average high counts: spring, 6; fall, 3. Frequency maximum: seen on 12 trips in 1921.

Seiurus motacilla. Louisiana Water Thrush.—Locally common summer resident. Breeds along streams on trap rock ridges; one breeding record along Elizabeth River. Extreme dates: April 16, 1916 to Oct. 12, 1925. Average occurrence: April 23 to Oct. 3. Day's maximum about Elizabeth: April, 2; May, 4; June, 2; Aug., 1; Sept., 1; Oct., 1. Day's maximum along trap rock ridges: June, 5. June average about Elizabeth, .2; along trap rock ridges, 3; all trips, 1. Average high counts: spring, 1.7; fall, 1.2. Frequency maximum: seen on 8 trips in 1925.

Oporornis formosus. Kentucky Warbler.*—Rare transient. Recorded in certain localities near Union and Kenilworth each year 1916 to 1921; no local record since. Extreme dates: May 14, 1916 to May 23, 1920; Aug. 20, 1916 to Sept. 21, 1919. Average arrival: spring, May 18. Since most of the records were in one locality—a wooded area between Elizabeth and Kenilworth—which was rarely visited in summer, there is a possibility that the bird might have bred. Day's maximum each month: May, 1; Aug., 4; Sept. 1. Frequency maximum: seen on 3 trips in 1916. Mr. Charles H. Rogers has two records near Milburn, N. J.

Oporornis agilis. Connecticut Warbler.*—No spring records. Recorded in fall 9 years out of 12. Extreme dates: Aug. 26, 1896 (Scott); Sept. 1, 1916 to Oct. 18, 1925. Average occurrence: Sept. 14 to Oct. 1. Day's maximum each month: Sept., 3; Oct., 3. Average high count: fall, 2. Frequency maximum: seen on 4 trips in 1921.

Oporornis philadelphia. Mourning Warbler.*—Rare transient about Elizabeth. Two records in 12 years: June 6, 1926 (2); Oct. 7, 1923 (1). (Also June 3, 1928, in Essex County Reservation.) Mr. Miller found it more frequently in the spring in the Plainfield region—about 3 out of 5 years; but no positive fall record up to 1927.

Geothlypis t. trichas. Maryland Yellow-throat.—Abundant transient and summer resident, though number of breeders varies considerably from year to year. Extreme dates: April 25, 1929; May 1, 1921 to Nov. 24, 1927. Average occurrence: May 4 to Oct. 21. Day's maximum each month: May, 125; June, 70; July, 50; Aug., 18; Sept., 20; Oct., 15. June average, 18. Average high counts: spring, 68; fall, 17. Frequency maximum: seen on 31 trips in 1916.

Icteria v. virens. Yellow-breasted Chat.—Formerly a very common summer resident in the bushy areas about Elizabeth where in the 90s a dozen birds could be heard calling at one time. Now rare about Elizabeth, in fact no longer common

anywhere in Northern Union County. Extreme dates: May 6, 1927 to Sept. 9, 1927. Average occurrence: May 11 to Sept. 4. Day's maximum each month: May, 3; June, 4; July, 7; Aug., 2; Sept., 1. Average high counts: spring, 3; fall, 2. June average, .8. Frequency maximum: seen on 14 trips in 1916.

Wilsonia citrina. Hooded Warbler.*—A very rare transient about Elizabeth where records are fragmentary. In the Plainfield region Mr. Miller found it as uncommon as the Mourning Warbler. Since 1921 I have found it breeding, I believe in increasing numbers, in the Essex County Reservation, one pair occurring very near the Union County line and a singing male in Union County June 22, 1929. My earliest date is May 13, 1923, though I found it in Troy Meadows, near Boonton, April 28, 1929. Average arrival, 5 years: May 15. Day's maximum each month: May, 3; June, 3; June 22, 1929, 9 singing birds. No late records. Average number per June trip Essex County Reservation, 1924-1927: 2; average, all June trips: .6. Average high count: spring, 1.2; fall, 0. Frequency maximum: seen on 3 trips in 1924.

Wilsonia pusilla. Wilson's Warbler.—Irregularly common in spring; uncommon in fall. Extreme dates: May 12, 1920 to May 31, 1926; Aug. 20, 1922 to Sept. 29, 1918. Average occurrence: May 15 to 27; Sept. 1 to 25. Day's maximum each month: May, 10; Aug., 4; Sept., 4. Average high counts: spring, 6; fall, 3. Frequency maximum: seen on 3 trips, several years.

Wilsonia canadensis. Canadian Warbler.—Common transient in spring; less common in fall. Extreme dates: May 7, 1922 to June 10, 1917; Aug. 10, 1923 to Oct. 2, 1927. Average occurrence: May 11 to June 2; Aug. 16 to Sept. 21. Day's maximum each month: May, 30; June, 2; Aug., 8; Sept., 7; Oct., 1. Average high counts: spring, 11; fall, 5. Frequency maximum: seen on 6 trips in 1923.

Setophaga ruticilla. Redstart.—Abundant transient. Occasionally breeds near Elizabeth; rather common summer resident toward and on the trap rock ridges and wooded areas in northern part of county and Essex County Reservation. Holmes in 1906 rated it "a very rare summer resident—but one record" about Summit. This notation on a printed list may have been a misplacement, a typographical error. Extreme dates: May 4, 1919 to Oct. 12, 1925, and Oct. 13, 1896 (Scott). Average occurrence: May 5 to Oct. 7. Day's maximum each month: May, 50; June, 20; July, 11; Aug., 20; Sept., 24; Oct., 3. June average, 5 (probably includes some transients as was evident in early June trips of 1926). Average high counts: spring, 34; fall, 18. Frequency maximum: seen on 20 trips in 1916.

Anthus rubescens. Pipit.—Abundant in fall, chiefly on salt marsh; casual in winter; common in spring. Extreme dates: Aug. 27, 1925 to Dec. 26, 1920; also Jan. 22, 1927 (Eaton); Feb. 12, 1925 to May 16, 1926. Average occurrence: Sept. 14 to Dec. 1; March 24 to May 6. Day's maximum each month: Aug., 8; Sept., 65; Oct., 150; Nov., 150; Dec., 3; Jan., 1+; Feb., 1; March, 50; April, 24; May, 13. Average high counts: spring, 19; fall, 121. Frequency maximum: seen on 20 trips in 1925.

Mimus p. polyglottos. Mockingbird.—Three records in Elizabeth region: May 11, 1919; June 6 and 15, 1925 (probably same bird). Mr. Miller has three records near Plainfield, one in May and 2 in September.

Dumetella carolinensis. Catbird.—Very common transient and summer resident. One winter record: Jan. 1, 1921. Otherwise: April 23, 1927 to Nov. 9, 1924. Average occurrence: May 1 to Oct. 24. Day's maximum each month: April, 1; May, 42; June, 32; July, 23; Aug., 17; Sept., 30; Oct., 18; Nov., 1; Jan., 1. June average, 13. Average high counts: spring, 31; fall, 22. Frequency maximum: seen on 30 trips in 1916.

Toxostoma rufum. Brown Thrasher.—Common transient and summer resident. Extreme dates: April 10, 1927 to Oct. 22, 1922. Average occurrence: April 16 to Oct. 18. Day's maximum each month: April, 8; May, 33; June, 12; July, 10; Aug., 9; Sept., 10; Oct., 22. June average, 4. Average high count: spring, 18; fall, 11. Frequency maximum: seen on 27 trips in 1921.

Thryothorus l. ludovicianus. Carolina Wren.—Irregularly present as a permanent resident; sometimes absent for consecutive years. Day's maximum each month: Jan., 1; Feb., 2; March, 2; April, 3; May, 1; June, 2; July, 1; Aug., 2; Sept., 3; Oct., 4; Nov., 3; Dec., 2. June average, .15. Average high count: spring, 1.7; fall, 2.7. Frequency maximum: seen on 33 trips in 1926.

Troglodytes a. ædon. House Wren.—Common summer resident. Extreme dates: April 16, 1922 to Oct. 30, 1921. Average occurrence: April 23 to Oct. 18. Day's maximum each month: April, 15; May, 30; June, 26; July, 25; Aug., 20; Sept., 5; Oct., 15. June average, 10.5. Average high counts: spring, 24; fall, 12. Frequency maximum: seen on 28 trips in 1921.

Nannus h. hiemalis. Winter Wren.—Regular transient. Winters locally. Extreme dates: Sept. 18, 1921 to May 16, 1926. Average occurrence: Oct. 4 to April 29. Day's maximum each month: Sept., 1; Oct., 3; Nov., 4; Dec., 4; Jan., 3; Feb., 2; March, 2; April, 2; May, 1. Average high counts: fall, 2.3; winter, 2.5; spring, 1.3. Frequency maximum: seen on 15 trips in 1916.

Cistothorus stellaris. Short-billed Marsh Wren.*—Rare straggler. No known breeding colony nearer Union County than Great Swamp across the Passaic River. One local record June 17, 1923 and one bird on salt marsh in June, 1928, though Mr. Miller had records in the Plainfield region.

Telmatodytes p. palustris. Long-billed Marsh Wren.—Breeds on local salt marsh; formerly more common than today due to decrease in cattail beds. Extreme dates: May 3, 1924 to Dec. 3, 1922. Average occurrence: May 11 to Nov. 8. Day's maximum each month 1920-1927: May, 16; June, 30; July, 30; Aug., 15; Sept., 6; Oct., 3; Nov., 1; Dec., 1. In 1918 as many as 75 singing birds were counted on one June trip and in the 90s the number heard on one trip over the extensive cattail beds on the marsh was frequently over 100. June average since 1922, 9. Average high count: spring, 19; fall, 3. Frequency maximum: seen on 26 trips in 1922.

Certhia familiaris americana. Brown Creeper.—Common transient; regular in winter. Extreme dates: Sept. 11, 1921 to May 7, 1925. Average occurrence: Sept. 26 to April 27. Day's maximum each month: Sept., 20; Oct., 8; Nov., 7; Dec., 6; Jan., 6; Feb., 2; March, 3; April, 9; May, 3. Average high counts: fall, 8; winter, 3.6; spring, 4. Frequency maximum: seen on 19 trips in 1923. H. H. Hans (Wilson Bul., 1905) reported 2 adults with 5 young near Summit, July 23, 1905.

Sitta c. carolinensis. White-breasted Nuthatch.—Permanent resident. Day's maximum each month: Jan., 7; Feb., 8; March, 5; April, 6; May, 2; June, 2; July, 2; Aug., 2; Sept., 3; Oct., 7; Nov., 7; Dec., 6. June average, .5. Average high count: late fall and winter, 7. Frequency maximum: seen on 37 trips in 1916.

Sitta canadensis. Red-breasted Nuthatch.—Irregular transient, commoner in fall than spring; rare in winter. Extreme dates: Aug. 28, 1896 (Scott); Aug. 31, 1916 to May 18, 1924. Average occurrence: Sept. 7 to Oct. 30; May 4 to 15. Day's maximum each month: Jan., 1; Feb., 3; May, 2; Aug., 1; Sept., 5; Oct., 11; Nov., 2. Average high counts: fall, 6; spring, 1.5. There was a heavy wave in the fall of 1896 when Scott collected it from Aug. 28 to Oct. 20. Frequency maximum: seen on 10 trips in 1916.

Bæolophus bicolor. Tufted Titmouse.—Common permanent resident. Day's maximum each month: Jan., 9; Feb., 7; March, 12; April, 5; May, 12; June, 8; July, 4; Aug., 5; Sept., 10; Oct., 9; Nov., 7; Dec., 10. June average, 2.3. Average high counts: winter, 9. Frequency maximum: seen on 44 trips in 1924.

Penthestes a. atricapillus. Black-capped Chickadee.—Permanent resident; much commoner fall, winter and spring than in breeding season. Day's maximum each month: Jan., 20; Feb., 31; March, 19; April, 13; May, 5; June, 9; July, 11; Aug., 12; Sept., 10; Oct., 19; Nov., 25; Dec., 28. June average, 1.4. Average high count: fall, 19; winter, 27; spring, 11. Frequency maximum: seen on 32 trips in 1924.

Penthestes hudsonicus nigricans. Labrador Chickadee.†—Two found by Mr. Miller near Scotch Plains Dec. 17, 1916; one collected Dec. 31, 1916; also recorded Jan. 7 and 28, 1917 (Miller) and Feb. 4, 1917 (Miller and Rogers).

Regulus s. satrapa. Golden-crowned Kinglet.—Common transient; usually uncommon in mid-winter. Extreme dates: Sept. 24, 1925 to April 24, 1926. Average occurrence: Oct. 2 to April 17. Day's maximum each month: Sept., 25; Oct., 40; Nov., 35; Dec., 12; Jan., 7; Feb., 2; March, 8; April, 32. Average high counts: fall, 25; winter, 5; spring, 17. Frequency maximum: seen on 16 trips in 1922.

Regulus c. calendula. Ruby-crowned Kinglet.—Regular transient. Extreme dates: April 3, 1921 to May 21, 1922; Sept. 10, 1926 to Nov. 29, 1923. Average occurrence: April 9 to May 17; Sept. 20 to Nov. 10. Day's maximum each month: April, 53; May, 10; Sept., 30; Oct., 18; Nov., 3. Average high counts: spring, 21; fall, 17. Frequency maximum: seen on 14 trips in 1922.

Poliioptila c. carulea. Blue-gray Gnatcatcher.*—Rare. Two spring records in Elizabeth region: May 11, 1924 and May 15, 1925.

Hylocichla mustelina. Wood Thrush.—Common summer resident in western part of county, but decreasing about Elizabeth. Extreme dates: April 30, 1924 to Oct. 7, 1917. (Mr. Miller has recorded it about Plainfield as late as Dec. 25, 1909.) Average occurrence: May 2 to Sept. 30. Day's maximum each month: April, 1; May, 18; June, 12; July, 15; Aug., 7; Sept., 2; Oct., 2. June average, 2.5. Average high count: spring, 9; fall, 3. Frequency maximum: seen on 19 trips in 1916.

Hylocichla f. fuscescens. Wilson's Thrush.—Locally abundant summer resident, but rare in summer in immediate vicinity of Elizabeth. Breeds freely in

wet woods and wooded swamps about Kenilworth, and on trap rock ridges. Extreme dates: April 26, 1925 to Sept. 24, 1916. Average occurrence: May 2 to Sept. 15. Recorded in September 8 years out of 12. Day's maximum each month: April, 1; May, 21; June, 17 (20 in 1929); July, 12; Aug., 14; Sept., 5. June average, 5.2. Average high count: spring, 12; fall, 5. Frequency maximum: seen on 13 trips in 1921.

Hylocichla a. alicia. Gray-checked Thrush.—Undoubtedly a commoner transient than my records indicate. Extreme dates: May 12, 1918 to May 30, 1924; Sept. 18, 1896 (Scott); Oct. 2, 1927 to Oct. 9, 1921; Oct. 20, 1896 (Scott). Average occurrence: May 16 to 29; Oct. 2 to 9. Day's maximum each month: May, 4; Oct., 2. Average high counts: spring, 2; fall, 1. Frequency maximum: seen on 3 trips in 1927.

Hylocichla alicia bicknelli. Bicknell's Thrush.*§—Mr. Chas. H. Rogers reports in *The Auk*, Vol. XLV, No. 2, p. 225, four specimens of this species collected at South Orange, Essex County, N. J., by W. E. D. Scott, from Sept. 29 to Oct. 15, 1896. (Another taken Oct. 20, 1896.) These birds were probably collected along the trap rock ridges now part of Essex County Reservation which I include in the Elizabeth region. The subspecies is probably a regular transient. I have frequently seen very small thrushes which probably were Bicknell's but not positively identified. Scott called it "commonest thrush," Oct. 2, 1896.

Hylocichla ustulata swainsoni. Olive-backed Thrush.—Common transient. Extreme dates: May 11, 1922 to May 30, 1918; Sept. 3, 1925 to Oct. 13, 1918; Oct. 20, 1896 (Scott). Average occurrence: May 12 to 27; Sept. 12 to Oct. 7. Recorded in October 7 years out of 12. Day's maximum each month: May, 25; Sept., 14; Oct., 25. (These figures do not include large numbers heard flying south at night each fall.) Average high counts: spring, 14; fall, 8. Frequency maximum: seen on 8 trips in 1921.

Hylocichla guttata pallasi. Hermit Thrush.—Common transient; never recorded in winter in immediate vicinity of Elizabeth; occasional in winter along trap rock ridges and Mr. Miller found it wintering regularly in the Plainfield region. Extreme dates: Aug. 26, 1896 (Scott); Sept. 25, 1921 to May 16, 1926. Average occurrence: April 6 to May 12; Oct. 2 to Nov. 17, when not wintering. Day's maximum each month: Aug., 1; Sept., 1; Oct., 20; Nov., 20; Dec., 2; Jan., 2; Feb., no record; March, 1; April, 20; May, 3. Average high count: spring, 7; fall, 15. Frequency maximum: seen on 16 trips in 1925. The bird collected by Scott Aug. 26, 1896, was a female in worn breeding plumage.

Planesticus m. migratorius. Robin.—Abundant in summer; occasional in winter. Average occurrence when not wintering Feb. 10 to Dec. 1. Day's maximum each month: Jan., 3 (except in 1926 when a very early migration occurred; flock of 58 found on Jan. 24); Feb., 25; March, 225; April, 300; May, 100; June, 120; July, 110; Aug., 100; Sept., 250; Oct., 250; Nov., 50; Dec., 5. According to my counts there has been a considerable decrease in nesting Robins in the northern part of Union County since 1921. June average, 22. Average high counts: spring, 200; fall, 160. Frequency maximum: seen on 43 trips in 1922.

Sialia s. sialis. Bluebird.—Permanent resident; common transient; a few winter. Decreasing summer resident; few now nest in immediate vicinity of

Elizabeth. Day's maximum each month: Jan., 6; Feb., 6; March, 40; April, 30; May, 9; June, 11; July, 10; Aug., 10; Sept., 20; Oct., 50 (75 Oct. 21, 1928); Nov., 30; Dec., 7. Average occurrence when not wintering: Feb. 23 to Dec. 2. June average, 2.5. Average high counts: spring, 28; fall, 26. Frequency maximum: seen on 44 trips in 1916.

DISCUSSION

It would be natural to expect spring and fall transients nesting to the north to occur in larger numbers in the fall, since the fall flight includes the young of the year. A comparison of the average high counts in the preceding list does not conform in many species with this expectation. Most water birds can be as readily seen spring and fall; with them song is not an important aid in observation. It is therefore probable that fall daily counts of water birds would, in the majority of species using the same route both seasons, exceed spring daily counts were there no hunting season to drive the southbound birds along and prevent them from lingering and accumulating on favored feeding grounds, for there is less need for haste in the fall than in the spring movement. The truth of this was indicated in the summer and fall of 1928 when under protection fall counts of waders and ducks ran high.

Among the water birds the preceding figures up to and not including 1928 showed no outstanding seasonal differences except the following:

Those recorded 1916-1927 in noticeably larger numbers in the spring:—Practically all the ducks; Wilson's Snipe; Least Sandpiper; Greater Yellow-legs.

Those recorded 1916-1927 in noticeably larger numbers in the fall:—Laughing Gull; Bonaparte's Gull; Common, Black and Forster's Tern; Black-crowned Night Heron; Egret; Little Blue Heron; Pectoral, Red-backed and Semipalmated Sandpiper; Lesser Yellow-legs; Upland Plover; Black-bellied, Golden and Semipalmated Plover and Killdeer.

Duck and Wilson's Snipe counts in the fall were reduced by hunting and Greater Yellow-legs counts probably by some difference in the fall route, though the fall movement is more gradual, extending over a longer period. The larger fall occurrence of the Laughing and Bonaparte's Gull and Common Tern is undoubtedly occasioned by their tendency in spring to go directly to their nesting grounds, while in the fall they range more generally and tarry about favored feeding places. This also probably explains in part the larger fall occurrence

of several of the shore birds, though some, notably Golden Plover and Lesser Yellow-legs, have a different spring migration route. The Black Tern also falls within the latter class. The larger late summer and fall occurrence of Forster's Tern, Egret and Little Blue Heron is probably explained by additions from the south. Since the Federal Government established a closed season for shore birds the southward migration of a number of species indicates definite increases.

Among the land-birds, where there is a difference in average counts spring and fall it is usually in favor of the spring. This does not signify actually larger occurrence in the spring for spring counts are greatly aided by the song season; further, the southbound flight, being more gradual and protracted, will not normally yield as large counts in any single day as the shorter spring movement, though the number passing may be larger.

There are several species of land birds which are normally observed in Union County in larger numbers in fall than spring, notably Nighthawk, Tree Swallow, Migrant Shrike, Palm Warbler, Connecticut Warbler, Pipit and Carolina Wren. The Palm and Connecticut Warblers do not normally pass Union County in numbers in the spring. The larger occurrence of Migrant Shrike and Carolina Wren is probably due to post-breeding season movement from the south. The difference between spring and fall counts of Tree Swallows is enormous; comparatively few linger about Union County on their way north when the flight is scattered rather than *en masse*; but great numbers congregate about our marshes and ponds in the summer and fall.

The commoner and more regular spring occurrence of many of our small upland birds as compared to many of our smaller water birds indicates a tendency of the former to make the spring trip north in shorter hops than the latter.

Of the 276 species, sub-species and hybrids listed for the region in recent years only seven were observed in numbers of 1,000 or more in any one day from 1916 to 1927. These are:

	Highest Number
Tree Swallow	8,000
Semipalmated Sandpiper	4,000
Herring Gull	3,500
Grackle	3,000
Starling	2,500
Semipalmated Plover	1,200
Laughing Gull	1,000

This of course does not indicate their actual relative abundance compared with more retiring species which do not gather in great flocks.

The rise of the Laughing Gull, not observed locally by me before 1921, is the most remarkable.

Among the gulls the Herring predominates; among the ducks the Black; among the herons the Black-crowned Night; among the sandpipers the Semipalmated; among the plovers the Semipalmated; among the woodpeckers the Flicker; among the sparrows the Song; among the swallows the Tree; among the vireos the Red-eyed; among the warblers the Maryland Yellow-throat, though the Ovenbird leads in the wooded areas; among the thrushes the Robin.

Among the local upland breeding birds the ten leaders in the average June counts in the Elizabeth region since 1921 follow:

1st—Song Sparrow	46	6th—Chimney Swift	13.5
2nd—Starling	34	7th—Red-eyed Vireo	12.
3rd—Robin	22	8th—House Wren	10.5
4th—Maryland Yellow-throat	18	9th—Ovenbird	10.3
5th—English Sparrow	17	10th—Field Sparrow	10.

Grouping the list by highest maximum one-day counts for the period (1916 to 1927) we have the following:

Highest no. seen in one day	No. of species	Highest no. seen in one day	No. of species
1	56	50—100	24
2—4	44	100—500	25
5—10	42	500—1,000	5
10—25	41	Over 1,000	7
25—50	32		

Of the list of 276, 90 or over 32 per cent have never been seen in larger numbers than 2 in one day, while 140 or about 51 per cent have highest maximum for one day under 10.

RANKING OF THE WARBLERS

The 11 species of warblers known to breed in Northern Union County I should rank as of 1929 as follows, in order of estimated abundance, consideration being given June 1929 counts, and the average June counts of earlier years. These have been discounted in instances to eliminate probable late migrants and to allow for irregular distribution.

1st—Maryland Yellow-throat.	7th—Chestnut-sided Warbler.
2nd—Ovenbird.	8th—Worm-eating Warbler.
3rd—Yellow Warbler.	9th—Louisiana Water Thrush.
4th—Blue-winged Warbler.	10th—Hooded Warbler.
5th—Redstart.	11th—Yellow-breasted Chat.
6th—Black and White Warbler.	

The ranking of the warblers during the spring migration will make an interesting comparison with other regions. These are ranked according to "average high counts" up to 1927 as follows:

	Avg. high count
1st—Maryland Yellow-throat	68
2nd—Myrtle Warbler	63
3rd—Blackpoll Warbler	40
4th—Redstart	34
5th—Northern Parula Warbler.....	25
6th—Yellow Palm Warbler.....	25
7th—Black-throated Green Warbler.....	21
8th—Magnolia Warbler	20
9th—Black and White Warbler.....	17
10th—Blue-wing Warbler	17
11th—Black-throated Blue Warbler.....	17
12th—Chestnut-sided Warbler	17
13th—Ovenbird	15
14th—Yellow Warbler	11
15th—Canadian Warbler	11
16th—Bay-breasted Warbler	7
17th—Wilson's Warbler	6
18th—Northern Water Thrush.....	6
19th—Prairie Warbler	5
20th—Worm-eating Warbler	4
21st—Blackburnian Warbler	4
22nd—Yellow-breasted Chat	3
23rd—Cape May Warbler.....	2
24th—Louisiana Water Thrush.....	1.7
25th—Hooded Warbler	1.2
26th—Pine Warbler	1
27th—Tennessee Warbler .....	.7
28th—Mourning Warbler .....	.5
29th—Golden-winged Warbler .....	.3
30th—Palm Warbler .....	.2
31st—Kentucky Warbler .....	.2
32nd—Yellow-throated Warbler .....	.2
33rd—Orange-crowned Warbler .....	.2

This ranking is open to no end of criticism and discussion, but with a few exceptions, considering species by groups of six, it gives, I believe, a fairly accurate picture of relative numbers as seen during the northern migration in the northern part of Union County regularly covered by the writer. The Yellow Warbler, Ovenbird and Black and White Warbler are possibly ranked lower than their actual numbers of migrants passing warrant. However, east of the trap rock ridges I have not found the Ovenbird an abundant migrant.

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ABSTRACT
OF THE PROCEEDINGS OF THE
LINNAEAN SOCIETY
OF
NEW YORK

For the Two Years Ending
March 14, 1930

CONTAINING

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New York City Region

By John F. Kuerzi

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Summer Birds of Putnam County, New York

By John F. Kuerzi

Gardiner's Island Spring Bird Records 1794-7

By L. Nelson Nichols

Date of Issue, October 15, 1931

ABSTRACT

OF THE PROCEEDINGS OF THE

LINNÆAN SOCIETY

OF

NEW YORK

FOR THE TWO YEARS ENDING MARCH 14, 1930

Report of Secretary for 1928-1929

March 12, 1929.

During the past year, the Linnæan Society has held fifteen regular meetings, one being omitted because of conflict with the holiday season. In addition, the usual four informal meetings were held at monthly intervals throughout the summer, for the presentation and discussion of field-notes. There has been an increase in average attendance at meetings, owing perhaps to the more general nature of lectures and also possibly to an increased popular interest in ornithology both as a science and as a means of recreation.

The sixteenth Annual Dinner which also marked the Fiftieth Anniversary of the founding of the Society, was attended by 65 members and guests, while 52 members and 55 guests remained for the Annual Meeting, immediately following the banquet. The occasion was aptly celebrated by an especial program and by the presence of a gratifying number of the older members and founders. The guests of honor were: Dr. A. K. Fisher, Dr. Witmer Stone, Dr. George B. Grinnell, and Messrs. Harold Herrick and Ernest Ingersoll.

At the remaining fourteen regular meetings, attendance averaged 55.3; that of members 27.5, rather less by comparison with that of last year, but offset by the Annual Meeting.

The informal summer meetings were as usual interesting and informative, and, though each was attended by an average of only twenty persons, as was to be expected, the majority present were among

those most active in local field-work. There is certainly every reason for continuing these informal summer sessions.

The best attended regular meeting of the Society was that of November 13, the occasion on which Dr. F. R. Oastler lectured on the "Nesting Birds of the Bear River Marshes of Utah" to an audience composed of 41 members and 48 guests. The smallest meeting was that of October 9, when only 23 members and 8 guests were present.

Unfortunately the Society has recently lost by death one who has, for many years, been prominently identified with the work of the organization, Dr. Jonathan Dwight, a Fellow of the Society, who served as President for twenty-one years. His death is an irreparable loss to the Society. During the same week, Mr. Frederick Capen, a resident member, died suddenly after a short illness. Several members have resigned and 13 new members have been elected, so that membership now stands: Resident 142; Life Members 3; Fellows 7; Honorary Members 2; Non Resident 19.

As usual, the subjects considered at the majority of meetings have been primarily ornithological. Two meetings were, as is customary, devoted exclusively to the presentation of field-notes, one to Herpetology, two to scientific, laboratory and theoretical ornithology, three to travel and five to the avifauna of specified localities. Formal lectures presented at meetings are as follows:

March 27, "Life Zones of Roraima," by G. H. H. Tate.

April 10, "Impressions of the Birds of Jamaica," by Allen Frost and John H. Baker.

April 17, "Laboratory Methods in Ornithology," by S. Prentiss Baldwin.

May 8, "Symposium on Herpetology," led by Dr. G. K. Noble.

October 23, "Naturalist among the Indians," by Dr. G. Clyde Fisher.

November 13, "Nesting Birds of the Bear River Marshes of Utah," by Dr. Frank R. Oastler.

November 27, "Experiences of a Collector in Fukien, China," by Clifford H. Pope.

December 11, "Birds, Beavers and Bears," by Dr. Frank E. Oastler.

January 8, "Impressions of the Winter Bird-life of Florida," by Maunsell S. Crosby.

January 22, "Hypotheses of Bird Migration," by John T. Nichols.

February 12, "Comparison of Boston and New York Regions," by Ludlow Griscom.

February 26, "Birds of Bonaventure Island," by S. H. Chubb.

Many members of the Society have been actively afield and the Society continues to amass a wealth of data from various parts of the New York Region which in many ways materially augments the current local knowledge. In addition, data tending to indicate the relative seasonal abundance and distribution of species, in various type localities, are still being collected. The value of these data is directly proportional to the amount of cooperation obtainable from the membership at large, in contributing such seasonal reports. Lists of this nature have been generously submitted by a number of the more active members, and by one or two non-members. There is every reason for prolonging the filing of this important information and further cooperation by the membership, in this work, is earnestly urged.

Two cooperative breeding-bird census trips were undertaken under the auspices of the Society; *i. e.*, in Putnam County, N. Y., June 10, etc., and on June 17, several members again worked the area about Delaware Water Gap, N. J., which had been visited last year, but owing to unfavorable weather conditions then prevailing the lists were seriously curtailed. Both trips this year were most successful and they represent distinct strides in the knowledge of breeding-birds of the less-frequent areas of our region.

The Society has continued to urge the protection, in so far as possible, of predatory birds and has taken active part in discussions of the matter, the results of which are considered favorable.

Early in the year, the Publications Committee reported that a limited number of the Society's publications were still in print and consequently available, and it was decided to dispose of surplus copies of the books, at original prices. There are still a few of the books remaining, and members desirous of obtaining or completing sets of the Society's publications are urged to do so, while they are available.

In conclusion, the Secretary wishes to thank the members for their cooperation, and in particular, our President Dr. Chapin, and Messrs. Carter, Eaton and Urner for much generous advice and assistance.

Respectfully submitted,

JOHN F. KUERZI, *Secretary.*

Report of Secretary for 1929-1930

March 14, 1930.

The Linnæan Society has held during the year fifteen meetings, one conflicting with the holiday season being omitted. The customary informal meetings also were conducted at monthly intervals, from June to September inclusive, expressly for the presentation and discussion of results of summer field-work. There has been a perceptible decrease in the total attendance at meetings of the Society, but to offset this, there is a manifest increase in the proportion of members of the Society attending meetings.

The Annual Dinner of the Society was held in the Main Bird Hall of the Museum and was attended by 62 members and guests, while the Annual Meeting immediately following, drew 39 members and 47 guests. The address of the evening by Dr. J. P. Chapin was entitled "Birds of the Belgian Congo." Attendance at the remaining fourteen regular meetings averaged 41.9; that of members 29.1; this latter figure representing an appreciable increase over that of last year.

Informal summer meetings, always a source of much benefit and pleasure, particularly to the more active members, were attended by an average of 23 persons; the percentage of members being 17.5. I am sure that we all favor continuance of these highly instructive and enjoyable informal sessions.

Attendance at meetings of the Society varies perceptibly and is dependent to some extent upon the weather on meeting-nights, but to a far greater degree on the season, the importance of the matters under consideration or the relative popularity of the speaker. The best attended meeting (barring the Annual Meeting) was that of October 29, when 30 members and 25 guests were present. The poorest attended meeting was that of November 26, when only 25 members and 6 guests were in attendance.

The Society grieves over the sudden and untimely death of a much esteemed friend, Waldron De Witt Miller who, while not one of its members, was nevertheless an occasional visitor or lecturer at its meetings, and was well-known to, and highly regarded by, the membership at large. His death marks an irrevocable loss to constructive ornithology, as well as to practical conservation measures affecting it.

Several members have resigned or have been dropped for non-payment of dues and sixteen new members have been elected, so that

membership now stands: Resident 156; Life 3; Fellows 7; Honorary 2; Non-resident 17.

In accordance with the chief interest of the Society the majority of the subjects considered at its meetings have been of a primarily ornithological nature. The usual two meetings were devoted exclusively to the consideration of field reports; one to Herpetology; three to scientific and theoretical ornithology; two to travel and six to localized avifauna. Formal papers or lectures were presented before the Society as follows:

March 26, "Herpetological Symposium," led by Jay A. Weber.

April 9, "Birds of Charleston, S. C.," by John F. Kuerzi.

April 23, "Wings and Feathers of Birds," by W. DeW. Miller.

May 14, "Nesting-birds of the Long Trail, Vermont," by W. F. Eaton.

October 29, "Fish Hawks of Fishing Creek," by S. H. Chubb.

November 12, "The A. O. U. Meeting and Other Matters," by J. T. Nichols.

November 26, "Uses of Bird Feathers by the American Indian," by P. A. DuMont.

December 10, "Home-life of Brewster's Warbler," by T. D. Carter.

January 14, "Geographic Races and Evolution of Birds," by Dr. J. P. Chapin.

January 28, "Shore-bird Tracks and a Discussion of Barnegat Duck Census Trips," by C. A. Urner.

February 11, "A Trip through Abyssinia," by T. D. Carter.

February 25, "Birds of the Canal Zone," by J. M. Johnson.

During the past year, a gratifyingly increased interest has been shown, both in the field and at meetings in local observations, perhaps owing chiefly to the fact that the Society is fortunate in having as President one of the most energetic and capable observers that the New York Region has known. The Society has had the distinct advantage of his experience and judgment in conducting meetings, and in addition active field-workers have had the pleasure of his companionship and the benefit of his active leadership in field-work. As usual many members of the Society have engaged actively in field-work both locally and otherwise, and the minutes of the Society continue to be filled with field-notes and records of unusual interest and

importance. To augment this, the usual data bearing upon the relative seasonal abundance and distribution of bird-life in various type localities of the New York area are continuing to be filed. There is certainly every reason for prolonging the assembling of this valuable information; it is also a source of satisfaction to realize that even if it were permitted to lapse either wholly or in part, there are now data covering 5 to 6 years on our books, from which significant comparisons could be drawn, were it decided to resume the work, a few years hence.

In accordance with the principles of the Society, several cooperative breeding-bird trips were undertaken to the less known or less frequented areas of the Region. Our President, Mr. Urner, added materially to our knowledge of the breeding-birds of northern New Jersey by systematically working the Troy Meadows, with others, and by visiting other locations in the interior of the State in June. In addition, further information was obtained concerning the breeding-birds of Putnam County, several trips being made to that region, and also a preliminary survey of Orange County, N. Y., was undertaken, under the direction of the Secretary. This is an exceedingly interesting phase of the work of the Society, and is worthy of far wider and more general support by the membership at large.

Perhaps no account of local field activities is complete without especial mention of one particularly interesting phase of seasonal work, namely the Federal duck and waterfowl censuses which, though now taken at monthly intervals throughout the year, are doubtless of most interest and appeal in fall, winter and spring. Various areas of the New York Region from Montauk Point to Atlantic City have been systematically studied at regular intervals, but probably none of these trips were more eagerly anticipated or more thoroughly enjoyed than those to Barnegat Bay, N. J., engineered by Mr. Urner and guided by Oscar Eayre, a picturesque veteran bayman of that region. These trips, in addition to accomplishing their purpose and being enjoyable "get-togethers," doubtless added to the ability of many members to identify moving waterfowl, particularly at a distance, and gave the Society a better picture of the relative abundance and distribution of waterfowl on Barnegat Bay.

As usual, the Society has made every effort to discourage the indiscriminate killing of hawks and owls. In addition, and owing chiefly to the efforts of its President and those of Mr. B. S. Bowdish, of the New

Jersey Audubon Society, it is now investigating the possibility of protecting the most northern nesting-colonies of the Black Skimmer along the Atlantic Seaboard, near Brant Beach, N. J.

Numbers "39 and 40" of the Abstract of the Proceedings of the Society have recently been published. The Council of the Society is to be congratulated on its decision to adopt the "excellent plan of our neighbor, The Delaware Valley Ornithological Club," in summarizing the ornithological years and in presenting the field-notes in a far more accessible and available form than that in which they heretofore were preserved. Messrs. Griscom and Eaton have set an enviable standard in writing up the outstanding ornithological events of 1926 and 1927. In addition the book contains a comprehensive and detailed list of the "Birds of Union County, N. J." by Mr. Charles A. Urner, got up in the form of a statistical survey. Mr. Urner has made an especial survey of the bird-life of this interesting section of New Jersey, over a long period of years, and has prepared a valuable resume of his experience with the birds of that area. It is to be hoped that other members will prepare similar lists covering the "local regions" with which they are particularly concerned.

Attention may well be directed to the fact that the Society still has a limited number of its earlier publications and members desirous of obtaining or completing sets of these books are urged to communicate with the Secretary while they are still available.

The Secretary regrets that a prolonged stress of outside activities has not only seriously curtailed the amount of the time he has been able to devote to the interests of the Society but has even frequently interfered with his attendance at meetings. In retiring from office, he wishes to express his sincere appreciation to the Society for the splendid opportunity it has afforded him of being of service to it. He wishes to thank the membership for its excellent cooperation and he is particularly indebted to our President, Mr. Urner, and to Messrs. Carter, Crosby and Eaton for much kindly advice and generous assistance.

Respectfully submitted,

JOHN F. KUERZI, *Secretary.*

The Ornithological Year 1928 in the New York City Region

BY JOHN F. KUERZI

The plan of writing up the ornithology of the New York City Region by years, inaugurated in 1926, has met with such general approbation that it has been unanimously decided to continue this method of presenting the field-notes submitted at meetings. The Linnæan Society now serves as a veritable "central clearing-house" for a continuously increasing volume of records of ornithological observations made in the New York Region and its environs. This information when properly presented and made available for reference materially augments contemporary local knowledge.

Field-work in the New York area is, and perhaps always has been, complex, but, fortunately, remarkably well organized. The area is divided (or perhaps divides itself) into "local regions," each of which now has its recognized leader. Strictly speaking, no one of these sectional leaders is adequately equipped to present a resume of general conditions prevailing in the entire region, in any one year. However, the pleasurable task of arranging and presenting these notes—the bulk of which have been submitted at meetings—has been delegated to the Secretary who, while he may be primarily interested in some one section of the New York Region, is nevertheless in a position to get a more or less accurate picture of general conditions, from regular attendance at meetings, contact with fellow-members of the Society, and experience in handling the field-notes submitted at meetings. It is not to be thought, moreover, that the various local regions comprising the New York area, are necessarily water-tight compartments, or that sectional leaders adopt an attitude of "I am lord of all I survey." As a matter of fact, "trading" back and forth between "regions" and paying one another ornithological visits, is a definite, pleasurable feature of "birding" in this, as in practically every region.

The year 1928 will probably always be a memorable one, in the minds of New York ornithologists as well as in the annals of the Society. Seldom, indeed, have so relatively great a number of rare birds been recorded in this region in a single year. The spring migration of both land and waterbirds was remarkable for the variety and abundance of bird life which it brought to this area, and will perhaps always be particularly remembered for the occurrence of swallow-

tailed Kite, Red-bellied Woodpecker, Purple Gallinule and Bewick's Wren, all most notable species in the New York City Region. The fall migration of shorebirds and the summer flight of terns and herons, particularly along the New Jersey coast, were undoubtedly the heaviest and in many respects the most noteworthy in years. This was followed by a notable flight of *Alcidae*, ducks and other waterfowl, so that there was an almost continuous stream of events of unusual ornithological interest from January to December, obviating any possibility of boredom or ennui for the bird-minded New Yorker.

The month of January was unusually mild and open, with some cold weather, though cold days were promptly offset, in most cases, by more moderate ones. The only snow storm of any proportions occurred late in the month, on January 28-29. The winter bird life, strictly speaking, was rather uneventful, with little evidence of the presence of the rarer and more erratic northern finches. There were a few scattered reports of the Redpoll, and Red Crossbills in small numbers, and the Pine Grosbeak was recorded once from Dutchess County, N. Y.

A few Goshawks were to be found in places in which the species became more or less established during the great flight of last year, illustrating the interesting tendency of certain rare and erratic northern species to return to favorite haunts, south of their regular range, which they perhaps first visited during a general invasion by the species of that area. Another interesting example of this tendency, if such it may be termed, may be found in the occurrence of the Arctic Three-toed Woodpecker for five successive years at the Bronx Botanical Gardens, where the species became established during the memorable flight to New York and New England in 1923. It seems reasonable to presume that, generally speaking, the same individual bird tends thus to re-occur, but, of course, specific supporting data are almost entirely lacking, though bird-banding has furnished some data which tend to prove this general hypothesis.

The chief interest of this winter period centered about the really exceptional numbers of half-hardy birds which were lingering late, and in many instances actually wintering. Bonaparte's Gulls were abundant at Montauk Point, L. I. (and elsewhere), in January and a few Gannets remained well into the month. There were many reports, in fact far too numerous to mention here but some of which will be

found in the appended list, of half-hardy ducks and shorebirds remaining well past their customary departure date, and late or winter records for such species as Kingfisher, Red-headed Woodpecker, Blackbirds, Catbird, Fox Sparrow, Towhee, Pipit, etc., whose usual winter range is considerably to the south of New York.

The first half of February was generally mild, and as was to be expected, a few scattered reports of what appeared to be *bona fide* migrant Robins and Red-wings, began to reach us. The latter part of the month and early March were for the most part without severe or extreme weather though the temperature of this period averaged a bit below normal. Birds were notably scarce, the bulk of individuals of most species being decidedly late in arriving.

During this period, the observers' chief compensation, if such it may be termed, was to be found in the migration of fresh water ducks, certain of the rarer species locally, such as the Shoveller, Ring-necked Duck, Hooded Merganser, etc., being perhaps more evenly distributed than is usual. There is evidence, moreover, of a rather general movement of the earlier shorebirds in March and early April, particularly in New Jersey. For example, the Pectoral Sandpiper was present on the Newark Marshes in numbers on March 18 (Urner, Edwards), and Greater Yellow-legs appeared in several different localities on the remarkably early date of April 6. Another interesting phase of this season was the evidence of a definite movement of Migrant Shrikes through our area, mostly in late March and early in April. The species, normally one of the decidedly rare and irregular spring migrants, was observed in scattered localities in New Jersey and elsewhere on several occasions from March 29 to April 6, and in the Bronx Region on April 21, which presumably marked the end of the species' migration locally.

Several abnormal summer-like days during the first week in April, to quote from *Bird Lore's* "Season" . . . "found an immediate response in the vegetation and as pretty a response to weather as one often sees in bird migration." Many species such as Robin, Cowbird, Flicker, Chipping Sparrow, etc., first appeared in approximately normal numbers. Several species arrived in numbers earlier than is usual. Notable arrival dates for the Bronx Region, which seem to reflect this tendency in a representative fashion, are: Purple Martin 4, April 5; Green Heron 2, April 9; Long-billed Marsh Wren 1, April 15; King

Rail, April 15; Chimney Swift, April 15. Gnatcatchers appeared almost simultaneously in several localities on the remarkably early dates of April 11 and 14.

There was a general catching-up of migration during these few days, but during the second week of April the weather turned cloudy and cold and had a distinctly retarding effect on the migration. Despite this fact, certain landbirds continued to arrive on schedule or even a day or two in advance. By the third week of April, however, cool weather seemed to have delayed the advance of migrants over a wide front, and the now backward spring also retarded the departure of various species for the north. Among many late records of water-birds and landbirds, that of a Goshawk, in the Bronx Region on April 28, is perhaps the most nearly unique.

Two notable April reports are undoubtedly worthy of especial mention. A single Bewick's Wren was positively identified in the Ramble, Central Park, on April 20, though its occurrence there was probable as early as April 10 (Miss E. A. Capen). The bird was present up to May 8, singing freely during the early part of its sojourn, and was carefully observed by many other well-known New York observers including Messrs. Carter, Crosby, W. De W. Miller, Watson, etc.

Some of us are occasionally mildly amused at the enterprising nature of certain New Yorkers who seem to utilize every free moment for ornithological observation. Few of us but are guilty of back-yard observation, and many of us manage to "get in a little birding" from the train window or while driving to work, playing golf or in innumerable other ways. The honors for this particular type of sport, however, doubtless go to Messrs. Hickey and Cruickshank of the Bronx County Bird Club, who while watching a base-ball game at University Heights, New York, on the afternoon of April 30, allowed their attention to be diverted from the game long enough to permit their observation of an adult Swallow-tailed Kite, so obliging as to fly directly over them. The species is sufficiently striking to render its mis-identification under almost any conditions (even under the somewhat distracting ones described), most difficult. This is the first local spring record, perhaps since colonial times, when the species enjoyed a far wider range and doubtless appeared near New York with proportionately greater frequency.

The arrival of migrants during the first half of May was obviously delayed by unfavorable weather conditions—an unusual number of raw, cloudy and rainy days. The first flight of any proportions occurred on the 11th when 27 species of warblers were observed in the Bronx Region. This was checked for a day or more by foggy weather and on May 13 there was a secondary wave of the same general nature. On this date, a Red-bellied Woodpecker, in fine adult plumage, was observed at Van Cortlandt Park, Bronx Region (Herbert, Kassoy, Kuerzi). The bird was well seen, heard giving its characteristic notes, and the observation was in every way as satisfactory as possible. One of the observers had had previous field experience with the species in the South. It is suggested that the occurrence of the species locally was possibly correlated with a more or less general flight of Red-headed Woodpeckers to the New York area, at about the same time.

On May 20-21, and 23-24, there were well marked flights of the later migrants which, however, embodied numbers of the earlier-appearing species as well. As a result observers who made particular efforts toward securing long lists were perhaps most successful on or about May 20. As usual, many members of the Society made such concerted attempts, in their respective regions. A list of 106 species, May 13, at Boonton, N. J. (Carter, Watson), is perhaps comparable with a list of 126 species as a combined result of two parties working independently in Dutchess County, N. Y., on the same date (Crosby *et al*). On May 20, Messrs DuMont, Carter and Urner secured the remarkable one party list of 145 species by combining "choice locations" from Boonton, N. J., to Manasquan, N. J., an unusually favorable area which, however, is unfortunately not altogether continuous and, of course, requires three hours of driving to get over in a day. On the same date, two parties working the south end and northern half of the Bronx Region, respectively, together found 136 species, a list which is somewhat comparable with one of 124 species in Dutchess County, N. Y., on the same date (Crosby, *etc.*).

In general, the peak days of the migration were May 11, 21, and 22, with more species on the 11th but a great many more individuals on the 21st and 22nd, the latter dates being followed by an unusually abrupt decrease in the number and variety of migrants. Toward the latter part of the migration the Mourning Warbler was perhaps of

more general distribution than is normal for the species in our area. The Gnatcatcher was unusually plentiful throughout the region in April and May, and a nest of the species was found late in May near Swartswood Lake, N. J., by Mr. R. G. Furness, and reported in detail at a meeting of the Society. Mr. J. L. Edwards visited the locality later and found the adult birds but not the nest.

This is a most notable occurrence, and constitutes a new breeding record for the New York Region. The status of the species in our area is not well understood and many of us are inclined to class it as a migrant (north or west, though destination unknown) owing to the regularity with which it is found locally, particularly in spring. It is more than probable, moreover, that some individuals of the species frequently tend to overshoot their normal migration range, and thus reach the latitude of New York. The species is practically casual in summer about New York, though there are sufficient August and September (a very few late July and early October) records to indicate a movement (perhaps a post-breeding one) across or through the latitude of New York, at this season.

Another notable feature of the migration was the relatively frequent presence of the Caspian Tern about New York in May and early June. The species, first noted at Long Beach, L. I., on April 29 (Dr. Janvrin), was subsequently observed at Manasquan Inlet, N. J., May 20; Newark Bay, N. J., May 20; Oakwood Beach, S. I., May 25, and finally at Tod's Neck, Conn., on June 3. At least five of the birds were observed at Point Pleasant, N. J., on June 30 (Urner), and on this same date there was with them "a single Royal Tern, identified on the basis of deeper notch in tail, longer tail, lighter flight, and smaller, lighter bill than Caspian,—seen close over the surf at Point Pleasant, N. J." (Urner).

As a fitting dénouement to an altogether memorable spring migration, we may cite the occurrence of certain pelagic species, off the beach at Southampton, L. I., concerning which Mr. Helmuth writes (in a letter to Mr. J. T. Nichols): "On May 31, and several successive days, Jaegers were very common along the Ocean beach—both Pomarine and Parasitic Jaegers—the *former* predominating, and in both phases of plumage." Between 40 and 50 birds of both species were present on June 3. At the same time, "Sooty Shearwaters were positively abundant and could be seen from the dunes, resting in large

flocks on the water, just beyond the breakers. Fairly large numbers of Greater Shearwaters were also seen but the Sooties were literally observed by the hundreds." It is comparatively seldom that a marked spring migration of these interesting species is observed near New York; far more seldom are the birds to be seen in numbers to advantage from an ocean beach.

A single Purple Gallinule was present for several days on one of the uptown lakes in Central Park, first observed there on June 19 (F. Kessler, Carter, DuMont); its presence locally may perhaps be correlated with the occurrence of the species on Block Island on May 12, and at Stratford, Conn., on June 20.

In June the chief interest shifts to breeding birds, and as usual many members engaged actively in making systematic census-trips, particularly to outlying areas, data for which have been fragmentary or incomplete. Space is lacking to mention them all. A second trip was made by several members to the Kittatinny Mountains, about Delaware Water Gap, N. J., which had been visited last year but, owing to rain at that time, the lists were not quite satisfactory. This year the trip was most interesting and the results representative; in general, tending to extend the known breeding range of certain Canadian species, such as the Solitary Vireo, Canadian, Magnolia and Nashville Warblers in the New York Region, a little to the southward. In addition, a concerted effort was made to wipe out the ornithological *terra incognita*, sandwiched in between Westchester and Dutchess Counties, N. Y. The results of several trips to Putnam County were noteworthy for the far greater proportion of Canadian species breeding there, particularly in the western half between Cold Spring and Carmel, than were generally believed to do so.

In addition, the Bronx County Bird Club mapped out the distribution and relative abundance of the Kentucky Warbler, breeding mostly in their region. They found no less than six pairs of the birds in the area from Grassy Sprain to the Rockefeller property at Tarrytown, N. Y., and a seventh at Oscawana Lake, Putnam County, N. Y.; the last apparently representing a considerable extension of the known breeding range of the species in the New York area, east of the Hudson. Late in July (July 29) Mr. R. H. Howland found a Prothonotary Warbler, perhaps an eighth of a mile from the spot in which this species bred, at Pine Brook along the Passaic River, N. J., in 1924.

There remained scarcely a week-end between the last breeding-bird census and the first reports of south-bound shorebirds and swallows. Sparkling wood-land streams, and magnificent stands of hemlock and laurel which but a week before held promise of some rare breeder, late in June, suddenly lost their fascination, and not a few members of the Society carried, on their boots, the rich loam of the forest to the ocean beaches. A mere week or two before, mountains had tested the stamina of ornithologists; now the lure of the ocean beach was equally strong, bearing with it the delightful prospect of spending arduous hours crossing salt-marshes and scanning ocean beaches and tidal-flats for any possible examples of *rara avis* which might stray their way.

As a matter of fact, the fall migration about New York was one of the most memorable in history. It began on schedule and, in general, was characterized by a gratifying increase in the number of reports of the rarer species of shorebirds, and the summer flight of terns and southern herons was the heaviest on record. Mr. Urner's resume of ornithological conditions along the New Jersey coast during the summer and fall of 1928, as given at the informal meeting of the Society of September 18, is admirably comprehensive and complete and we cannot do better than quote it, practically as found in the minutes of that meeting. . . . "Mr. Urner summarized, in a most interesting fashion, his observations this fall along the New Jersey coast, chiefly in the Barnegat and Newark regions. . . . The flight of Black Terns along the New Jersey Coast was perhaps the largest in years, and Forster's Tern was present in unprecedented numbers in late summer, reaching its peak of abundance earlier at Barnegat than at Newark, seeming to indicate a flight from south to north. There has been a perceptible increase in ducks, notably Blue-winged Teal, Widgeon and Pintail on the Newark Marshes but apparently a corresponding scarcity of the birds farther south at Barnegat (where perhaps conditions were less favorable). Both the Little Blue Heron and Egret were unusually plentiful, reaching maximum numbers later at Newark than at Barnegat (perhaps further establishing the validity of this form of reasoning as applied to Forster's Tern). Twelve Yellow-crowned Night Herons were observed at Brigantine on August 25, and one at Elizabeth from September 5 to the end of the month. Shorebirds, particularly Dowitcher and Yellow-legs, were unusually

numerous in both localities in July, August and September. Among the rarer species observed by Mr. Urner and others were: Hudsonian and Marbled Godwit and Buff-breasted Sandpiper. Golden Plovers were fairly plentiful, chiefly in September and October. Other notable records include: Arkansas Kingbird, Long Beach, N. J., September 8; two Ravens, Barnegat, N. J., August 11; and Black Skimmer, Newark Marshes, August 29."

It is interesting to contrast this resume of conditions prevailing along the New Jersey coast with those existing on Long Island, for the same period. In general, we find less evidence of an unusually heavy flight of white herons on Long Island; the Little Blue Heron and Egret being only fairly common there, a condition perhaps induced by the relatively smaller amount of environment attractive to the birds on Long Island than in New Jersey. It is possible, also, that the main flight of the birds, after reaching middle New Jersey, tends to disperse, some birds, at least, migrating overland to such favorite resorts as Troy Meadows, N. J. The flight of Dowitcher and Curlew was early and rather unusually heavy. There is less evidence, however, of the presence of decidedly more of the rarer shorebirds on Long Island this fall. Buff-breasted Sandpiper was observed at Long Beach, L. I., September 23 and 24 (DuMont, Kuerzi, Kassoy, etc), and on October 1, at Mecox Bay, L. I. (Helmuth). The last-named observer also found about 50 Golden Plovers at Easthampton, L. I., October 23 and 24. Arkansas Kingbirds were recorded at Long Beach, L. I., on September 23 (Baker, etc.), and at Tod's Neck, Conn., August 14 (J. and R. Kuerzi).

A September storm of hurricane proportions and intensity devastated areas of Porto Rico and swept over portions of Florida and others of the Gulf states. It was felt in our latitude in the form of a two-day "no'theaster," setting in on September 19, and doing considerable damage along our water-front and ocean beaches. Simultaneously with its abatement the Sooty Tern appeared in various places on Long Island. The species was first observed on September 21, when Mr. Wilcox picked up two dead but perfectly fresh birds at Moriches Coast Guard Station, L. I. A dead bird was subsequently found at Oakwood Beach, S. I., September 23 (Peterson, Kessler, Muller) and on the same date, at Mecox Bay, near Watermill, L. I., three birds were seen flying about, and another was picked up dead

(Helmuth) ; a partly disabled bird was found at Georgica Pond, L. I., October 1 (Helmuth). Others were subsequently found in various stages of decomposition in late fall and early winter, which were presumably referable to this flight. That the main body of these birds should have apparently passed by the New Jersey coast to strike Long Island, is not to be wondered at, since Long Island juts much farther out into the ocean than any point on the New Jersey coast, and as a result sea-travelling birds are just so much more apt to strike it. One cannot help thinking moreover that a few of the birds "making shore" in New Jersey, would be easily overlooked owing to the fact that many miles of beach there are seldom visited, even by enterprising New Jersey ornithologists.

Generally speaking, there was little cool weather until late in September, when a sudden cool snap brought frost to outlying points, near the City. Unusually mild, and some warm weather followed, extending well into October. Transient land-birds appeared to be rather scarce in early fall though perceptible flights occurred on September 12 and 20, when transient Warblers were quite numerous, and several Orange-crowns were found in the Ramble, Central Park (DuMont). On October 1 another considerable flight of small arboreal birds took place, bringing with it White-throated Sparrows, Juncos and Kinglets in increasing abundance. The Connecticut Warbler was rather numerous locally, during September. There were scattered instances of individual land-birds lingering well beyond their usual departure date, though they generally appeared to slip away on about schedule time. The general character of the fall doubtless had some definite bearing upon this tendency. Perhaps the most notable seasonal record is that of the Lark Sparrow at Newark, N. J., October 28 (Urner), a species which, while recorded to some extent in the East, is still a very rare and notable bird in the New York area.

Autumn throughout most of the North-east was mild and late and the advent of winter correspondingly delayed. No appreciable amount of cold weather occurred until late in November when a "no'th-wester" introduced the first light snowfall of the season.

A notable seasonal record was that of the Purple Sandpiper at Tod's Neck, Conn., from November 1 (early) to 18, a maximum of two birds on the latter date. Both on Long Island and in New Jersey, waterfowl were returning in force. On November 11, over

2,600 Coots were counted on the north end of Barnegat Bay, at West Point Island, N. J., and on the same date, Messrs. Urner and Edwards singled out two White-fronted Geese from the many "Brant and Honkers" that were then, to employ a localism, "makin' their flight to the sou'thard." Ring-necked Ducks were found with the much more plentiful Scaup at Point Pleasant, N. J., and a few European Widgeon were observed on the east end of Long Island in December. Larks and Snowflakes were now pouring into the region and with them were a few Longspurs. Northern Shrikes were fairly numerous at Montauk Point, L. I., and Scoters were present in almost countless rafts off the Light,—the birds literally "darkening the water" for several miles out into the ocean. Among them were a few Eiders, mostly Kings. Early in the month, a single Harlequin was observed (Watson and DuMont) and *Alcidae* of several species began to be observed rather more frequently than is usual.

The Christmas Censuses in general failed to disclose any appreciable element of the rarer northern vistants and were noteworthy mostly for the relative variety and abundance of records for lingering "half-hardy" species. In the Elizabeth and Essex County, N. J., Region three observers found 59 species on December 23, and on the 25th 31 species were observed on Staten Island. In the Bronx Region on December 23, over an eighteen mile diameter, ten members of the Bronx County Bird Club accounted for 86 species—a list which seemed to reflect conditions closely. It comprised, in addition to a varied assortment of ducks and other waterfowl (including Gadwall, Shoveller and Wood Duck), five species of owls, and a host of semi-hardy land-birds, some of which were apparently lingering in numbers well beyond their average departure date—a condition which evidently did not prevail earlier in the season.

To the uninitiated, the following list of birds with annotations concerning relative abundance or distribution, dates of occurrence, etc., might appear confusing. First, it ought to be clear that only a selected list of the species found about New York, is featured; also that the remarks and comments are somewhat "selected," only new or additional information to augment that already published, being used. The list of birds is, consequently, a more or less arbitrary one,—confined to those species whose occurrence in New York has been noteworthy, in some respect, during the year 1928. The bulk of

records are what are known as "new locality records,"—that is, records for species new to a particular "region"; and further records for rare and erratic species, dates of occurrence later or earlier than those existing, or otherwise noteworthy, and in addition, observations representing new, or additional information concerning breeding birds of the more outlying and consequently less-known areas of this region, are included.

As for the area involved, we have not confined ourselves strictly to the New York City Region, as outlined by Griscom in his Handbook but rather, have included observations from such comparatively far off places as Dutchess and Putnam Counties, N. Y., and Brigantine and Barnegat, N. J., on the assumption that New York ornithologists regularly visit such places and the information which they accumulate is just as valuable as that which is obtained nearer the metropolitan area of New York. A relatively few records for Cape May, N. J., were added because they probably have not been published elsewhere,—though Cape May is more properly the bailiwick of the Delaware Valley Ornithological Club.

In tabulating certain of the records, a rather interesting impression is received, which doubtless has thus suggested itself to others, namely that of the similarity and coincidence characterizing various dates of occurrence of particularly the rarer species—a certain proximity in date, even for somewhat separated localities, pointing to the theory that early and late records, and those for certain of the rarer birds, and even for a few casual species, may frequently represent not isolated birds but rather relatively small groups of birds which, owing to their somewhat scattered nature and insignificant size, are often entirely unobserved or perhaps only partially observed. Mr. J. T. Nichols in recently discussing bird migration from the aspect of very early or late dates, or abnormal dates of arrival or departure, has pointed out that, in his opinion, "the migration of a given species is perhaps composed of that of numerous groups, each of which moves with remarkable precision in time, so that unusually late records, for example, are not necessarily fortuitous but, in some instances, may represent a group of birds so small in number of individuals, as ordinarily to be overlooked."

It is possible that in most regions observers are so few and so scattered that it would be rather difficult to substantiate such a theory.

The New York Region, however, is the proud possessor of a "veritable little army" of bird enthusiasts with the possible result that "a group of birds so small in number of individuals, as ordinarily to be overlooked," perhaps stands a fair chance of being, at least, partially noted and duly reported. In this connection, note particularly the presence (as listed), of: Canvasback, Ring-necked Duck (fall); Virginia Rail (winter); Wilson's Snipe (winter); Black-bellied Plover (late fall); Philadelphia Vireo, Mourning Warbler, Gnatcatcher (early spring), etc.

Mr. Nichols' theory of migration by groups, seems to lend itself as readily to an explanation of the occurrence of certain, at least, of the rare and even casual species, in our area. How often has one experienced the somewhat exhilarating effect induced by reporting some very rare bird, perhaps at a meeting of the Society, only to have one's enthusiasm rather rudely dampened by the fact that one or more other observers have discovered the same species, perhaps at about the same date, in their favorite region. The presence of the following species perhaps exemplifies this tendency to a greater or less degree: Caspian Tern; Sooty Tern; European Widgeon; Purple Gallinule; Marbled Godwit; Buff-breasted Sandpiper; Arkansas Kingbird; Migrant Shrike (spring); Mockingbird, etc.

Unfortunately, we are probably not justified in taking up further space with these and kindred subjects, but it will doubtless add materially to the interest of going through the following set of notes, if the reader's eye is open to similarities and coincidences in the abnormal occurrence of birds or in the occurrence of rarer species about New York, in 1928. There is much information still to be unearthed definitely to establish the interesting group theory of migration as proposed by Mr. Nichols.

Colymbus auritus. Horned Grebe.—Tod's Neck, Conn., Aug. 8 to 20, maximum of three (J. and R. Kuerzi).

Podilymbus podiceps. Pied-billed Grebe.—Dyker Heights, Mar. 17 (Hix); Cold Spring, N. Y., June 10, probably breeding (Kassoy, Herbert, J. and R. Kuerzi, Kessler); Brick House, N. J., early July (Beal and Peterson); over 35, Barnegat, N. J., Sept. 15 (Urner).

Gavia immer. Loon.—Croton Point, June 1; Croton Lake, Westchester County, N. Y., June 24 (Kuerzi)*.

*The writer, unless otherwise specified.

Gavia stellata. Red-throated Loon.—Bronx Region, N. Y., Sept. 16, earliest (Herbert).

Uria lomvia. Brünnich's Murre.—Hudson River, Riverdale, Feb. 12 (Cruickshank); Croton Point, Dec. 25 (J. and R. Kuerzi); Montauk, L. I., Dec. 8 (Watson).

Alca torda. Razor-billed Auk.—Montauk Point, Jan. 1 and 2 (Kassoy, J. and R. Kuerzi); 1, Westhampton, Dec. 23; 1, Montauk, Dec. 27; 1, Amagansett, Dec. 27; 2, Dec. 29 (all by Wilcox); Montauk, Dec. 30, 1 in flight and 1 dead (Peterson, Kassoy, J. and R. Kuerzi).

Alle alle. Dovekie.—Mr. Wilcox submits the following records, mostly of dead birds: 1, Westhampton, Dec. 16; 4, same locality, Dec. 17; 3, Montauk, Dec. 27; 15, in same locality, Dec. 28; 4, Amagansett, Dec. 27; 8, Montauk, Dec. 29; 19, Amagansett, Dec. 29; one live bird off Montauk on Dec. 27.

Stercorarius pomarinus. Pomarine Jaeger.—“On May 31, and several successive days, Jaegers were very common along the ocean beach (at Southampton)—both Pomarine and Parasitic Jaegers, the former predominating, and in both phases of plumage.” “Between 40 and 50 birds of both species were present on June 3,” (Helmuth).

Stercorarius parasiticus. Parasitic Jaeger.—See the preceding species. Also, Oakwood Beach, S. I., May 30 (Matuszewski and Kassoy); Cape May, N. J., Sept. 1 to 3 (Johnston); Oakwood Beach, S. I., Oct. 7, 9 birds (L. N. Nichols); Pt. Pleasant, N. J., Oct. 3 (DuMont); Dyker Heights, Nov. 17 (DuMont).

Rissa tridactyla. Kittiwake.—Montauk, Jan. 1 and 2 (Kassoy, J. and R. Kuerzi); 15, Pt. Pleasant to Sandy Hook, Nov. 27 (DuMont, etc.).

Larus hyperboreus. Glaucous Gull.—Practically unreported; several records submitted may refer to preceding species; Montauk, L. I., Dec. 22 and 25 (DuMont and Watson).

Larus leucopterus. Iceland Gull.—Hudson River, Jan. 24 (Cruickshank); Georgica Pond, L. I., June 3 (Helmuth); Montauk, L. I., Dec. 24 (DuMont and Watson). Decidedly scarcer this year than for several years preceding.

Larus kumlieni. Kumlien's Gull.—The following sight records are worthy of consideration: Feb. 21, at Eastchester Bay, a “white gull with a small group of dark spots on each wing on primaries, about two inches from the outer point of the wing, probably a Kumlien's Gull (L. N. Nichols); Feb. 5, 1928, Newark Bay, N. J. (Urner). See Abstract Proc. Linnæan Society Nos. 39-40; p. 57.

Larus delawarensis. Ring-billed Gull.—Tottenville, S. I., June 16; 75, Cape May, N. J., Sept. 1 to 3 (Johnston).

Larus atricilla. Laughing Gull.—Tottenville, S. I., June 16 (Johnston).

Larus philadelphia. Bonaparte's Gull.—1000 Montauk, Jan. 1 and 2 (Kassoy, J. and R. Kuerzi); Dyker Heights, Feb. 4 (Johnston); Tottenville, S. I., June 16 (Johnston); Montauk, Dec. 30, 40 birds (Bronx County Bird Club).

Sterna caspia. Caspian Tern.—Long Beach, L. I., April 29 (Janvrin); 2, Newark Bay, N. J., May 20 (Edwards); Manasquan Inlet, N. J., May 20 (Carter, DuMont and Urner); Oakwood Beach, S. I., May 25 and June 3 (Cruickshank, Kessler and Hix); Tod's Neck, Conn., June 3 (Kuerzi); 5, Pt. Pleasant, N. J., June 30 and July 1 (Urner).

Sterna maxima. Royal Tern.—"Identified on basis of deeper notch in tail, longer tail, lighter flight, and smaller, lighter bill than Caspian—seen close over the surf at Pt. Pleasant, N. J., June 30" (Urner).

Sterna forsteri. Forster's Tern.—25, Barnegat, N. J., Sept. 2 (Johnson and Urner); Cape May, N. J., Sept. 1 to 3 (Johnston); 110, Newark Marshes, N. J., Sept. 9 (Eaton); 140, same locality, Sept. 15 (Kessler and Kuerzi); New York Bay, Sept. 22 (DuMont); 230, Newark Marshes, N. J., Sept. 23 (Urner and Edwards); Pt. Pleasant, N. J., 4, Oct. 4 (DuMont); 1, Bronx Region, N. Y., Sept. 20 (Kessler and Kuerzi); Croton Point, N. Y., 5, probable, Oct. 7; well seen and positively identified in the same locality on Oct. 14 (Peterson, Herbert, Kuerzi).

Sterna dougalli. Roseate Tern.—Little Beach, N. J., June 29 (Beal, Peterson and Stearns); Cape May, N. J., Sept. 1 to 3 (Johnston); Montauk Point, Aug. 19 (Allen).

Sterna fuscata. Sooty Tern.—2 dead, Moriches, Coast Guard, L. I., Sept. 21 (Wilcox); 1 dead, Oakwood Beach, S. I., Sept. 23 (Peterson, Muller and Kessler); 3 flying, Mecox Bay, Watermill, L. I., Sept. 23; 1 disabled, Georgica Pond, L. I., Oct. 1 (all by W. T. Helmuth, Jr.), 1 picked up dead, much decomposed, Hampton Bays, L. I., Dec. 24 (Wilcox).

Hydrochelidon nigra surinamensis. Black Tern.—250, Newark Marshes, N. J., Sept. 1 (Urner and Edwards); 650, Barnegat, N. J., Sept. 2 (Urner); 300 Cape May, N. J., Sept. 1 to 3 (Johnston); 13, Sparta, N. J., Aug. 26 (Edwards); 75, Newark Marshes, N. J., Sept. 23 (Urner, Edwards, Johnston, Kuerzi, etc.); 20, same locality, Sept. 30 (Peterson and Muller).

Rynchops nigra. Black Skimmer.—125 adults and 75 young, Brant Beach, N. J., Aug. 25 (Carter, DuMont and Urner); 1 at Newark Marshes, N. J., Aug. 29 (Urner); 200, Cape May, N. J., Sept. 1 to 3 (Johnston); 1, Easthampton, L. I., Oct. 16 (Helmuth).

Puffinus borealis. Cory's Shearwater.—Montauk, Aug. 22 (Allen and Breslau).

Puffinus gravis. Greater Shearwater.—See the following species.

Puffinus griseus. Sooty Shearwater.—May 31 to June 3, Southampton, L. I.: ". . . positively abundant and could be seen from the dunes, resting in large flocks on the water, just beyond the breakers. Fairly large numbers of Greater Shearwaters were also seen but Sooties were observed literally by the hundreds." (Helmuth).

Sula bassana. Gannet.—40, Montauk, Jan. 1 and 2, 1, Feb. 13 (Kassoy, J. and R. Kuerzi); Easthampton, L. I., Sept. 23 (Helmuth); 45, Montauk, Dec. 30, mostly flying east (Peterson, Kassoy, J. and R. Kuerzi).

Phalacrocorax carbo. Cormorant.—The following sight record is without details: several, Gardiners Bay, Oct. 5 to 7, with Double-crested Cormorants (Helmuth).

Phalacrocorax auritus. Double-crested Cormorant.—Montauk, L. I., June 24 (Allen and Watson).

Lophodytes cucullatus. Hooded Merganser.—Kensico Reservoir, 1, Mar. 1; 12, March 31; 2, Apr. 4, and 1 on Apr. 29 (Kassoy, Herbert, Kuerzi, etc.); Montauk, L. I., June 24 (Allen and Watson); 25, Kensico, Nov. 28; 4, Dec. 23 (Bronx County Bird Club); Boonton Reservoir, N. J., Dec. 31 (Eaton).

Chaulelasmus streperus. Gadwall.—Bronx Region, Dec. 23 (Bronx County Bird Club).

Mareca penelope. European Widgeon.—Fine drake under ideal conditions, Great Pond, Montauk, Dec. 2 (Kessler, Peterson, Kassoy and J. and R. Kuerzi); Manahawkin Bridge, N. J., Dec. 9 (Hickey, Kassoy and R. Kuerzi); pair, Easthampton, L. I., Dec. 8 (Helmuth).

Mareca americana. Baldpate.—200, Montauk, L. I., Jan. 1 and 2; 100, Feb. 12 to 13 (Kassoy, J. and R. Kuerzi).

Querquedula discors. Blue-winged Teal.—6, Overpeck Creek, April 9 (Cruickshank); Bronx Region, May 6 (Cruickshank); Overpeck Creek, May 20 (Peterson and Stearns); 29, Newark Marshes, Sept. 9 (Edwards, Eaton, etc.); 30, same locality, Sept. 23 (Johnston, Edwards, Urner and Kuerzi).

Spatula clypeata. Shoveller.—Bronx Zoological Gardens, drake, from January to March 6 (numerous observers); Overpeck Creek, 6, Mar. 22 (DuMont); Tod's Neck, Conn., pair, April 1 (Kuerzi); Croton Point, drake, April 14 (Johnston); Bronx Region, April 26 (Kuerzi); Newark Marshes, N. J., 6, Sept. 5 (Urner); 1, same locality, Sept. 23 (Johnston, Urner, Edwards, Herbert and Kuerzi); Bronx Region, 1, Dec. 23 (Bronx County Bird Club).

Dafila acuta. Pintail.—Flock of 20, Newark Marshes, N. J., Sept. 5 (Urner).

Aix sponsa. Wood Duck.—42, Bronx Region, Sept. 16; 14, Dec. 9; 3, Dec. 23 (Bronx County Bird Club).

Marila americana. Redhead.—Fort Pond, Montauk, 150, Dec. 9 to Dec. 30 (Peterson, Herbert, Kessler, Kassoy and J. and R. Kuerzi).

Marila valisineria. Canvasback.—2, Pt. Pleasant, N. J., Oct. 5 (DuMont); 4 or 5, Easthampton, L. I., Oct. 6 (Helmuth).

Marila affinis. Lesser Scaup.—Overpeck Creek, N. J., May 20 (Peterson).

Marila collaris. Ring-necked Duck.—3, Putnam Lake, Greenwich, Conn., Apr. 5 (Kessler and J. and R. Kuerzi); Kensico Reservoir, Oct. 21 (Kuerzi and Kassoy); 2, same locality, Nov. 1 (DuMont); 3, Pt. Pleasant, N. J., Nov. 10 and 11 (Urner, Edwards, Kassoy, Peterson, Herbert and Kuerzi); 1, in same

locality, Dec. 8 (Coolidge, Janvrin and Urner); 2, Montauk, L. I., Dec. 6 to 10 (Helmuth); 6, Watermill, Mecox Bay, L. I., Dec. 7 (Helmuth).

Clangula clangula americana. Golden-eye.—Tod's Neck, Conn., June 3 and Oct. 25 (Kuerzi); 3, Easthampton, L. I., Oct. 5 (Helmuth).

Charitonetta albeola. Bufflehead.—Abundant on Barnegat Bay, N. J., chiefly north of Manahawkin Bridge, often present in hundreds, November to April (Urner and others).

Harelda hyemalis. Oldsquaw.—Gardiners Bay, L. I., Aug. 24 (Allen and Breslau).

Histrionicus histrionicus. Harlequin.—Montauk, L. I., Jan. 1 and 2 (Kassoy, and J. and R. Kuerzi) same locality, Dec. 8 (Watson, Nelson and DuMont).

Somateria dresseri. American Eider.—2 drakes, 2 probable ducks, Montauk, L. I., Dec. 6 to 10 (Helmuth).

Somateria spectabilis. King Eider.—2, Montauk Point, L. I., Jan. 1 and 2 (Kassoy, J. and R. Kuerzi); female or immature male, crippled by broken wing, in the surf at Long Beach, L. I., Nov. 25 (Janvrin); immature drake, Montauk, Dec. 8 (Watson, Nelson and DuMont); 3 in same locality Dec. 30 (Peterson, Herbert, Kassoy, J. and R. Kuerzi); Bronx Region, female, from Dec. 23 through January (Bronx County Bird Club).

Erismatura jamaicensis. Ruddy Duck.—Mastic, L. I., Aug. 19 (J. T. Nichols); Pt. Pleasant, N. J., Oct. 3 (DuMont); 27, same locality, Nov. 10 and 11 (Urner, Edwards, Herbert, Kassoy, Peterson and Kuerzi); 40, Fort Pond, Montauk, L. I., Dec. 2 (Bronx County Bird Club); 66, Southampton, L. I., Dec. 27 to 29 (Wilcox).

Chen hyperboreus sp.? Snow Goose, probably Greater.—6, Patchogue, L. I., Dec. 25 (M. A. Nichols).

Anser albifrons gambeli. White-fronted Goose.—2, Barnegat, N. J., Nov. 11 (Edwards and Urner).

Branta canadensis. Canada Goose.—Long Beach, L. I., May 30 (Janvrin).

Cygnus olor. Mute Swan.—107 counted along south shore of Long Island, from Southampton west, Aug. 19 (Allen and Breslau).

Ixobrychus exilis. Least Bittern.—Cold Spring, Putnam County, N. Y., June 10 (Ingle, Coolidge, Kassoy, Kessler, J. and R. Kuerzi).

Herodias egretta. American Egret.—Bernardsville, N. J., Aug. 9 (Miss Cynthia Kuser); Yonkers Reservoir, N. Y., mid-August (Vogt); Newark Marshes, N. J., maximum of 21, Aug. 29 (Edwards and Urner); a few Long Island records.

Florida caerulea. Little Blue Heron.—Adult, Barnegat, N. J., May 6 (Urner and Kuerzi); 3 adults, Cape May, July 4 (Peterson, Stearns and Beal); 116, Barnegat, N. J., Aug. 11 (Eaton and Urner); 38, Newark Marshes, N. J., Aug. 29 (Edwards and Urner); Westport, Conn., Sept. 15 (DuMont); fairly common on Long Island, August, September (J. T. Nichols, etc.).

Butorides virescens. Green Heron.—Van Cortlandt Park, April 9 (Kessler).

Nyctanassa violacea. Yellow-crowned Night Heron.—Adult, Tod's Neck, Conn., July 10 (J. and R. Kuerzi); 12, Brigantine, N. J., Aug. 25 (Urner); 1, Newark Marshes, N. J., Sept. 5 to 30 (Urner, Peterson, Kuerzi, Johnston, etc.).

Rallus elegans. King Rail.—Van Cortlandt Park, April 15 (Kassoy, Herbert and Kuerzi); Caldwell, N. J., May 6 and 13 (Peterson and Stearns); Dutchess County, N. Y., May 20 (Crosby, etc.); Van Cortlandt Park, Sept. 15 (Brody and Elwood); Orient, L. I., Dec. 25 (Latham).

Rallus crepitans. Clapper Rail.—Montauk, L. I., June 24, heard (Allen); Pelham, Bronx Region, Jan. 28 (R. C. Black).

Rallus virginianus. Virginia Rail.—Speonk, L. I., Dec. 22 (Wilcox); Bronx Region, Dec. 23 (Bronx County Bird Club).

Ionornis martinicus. Purple Gallinule.—Central Park, June 19, etc. (F. Kessler, Carter and DuMont).

Gallinula galeata. Florida Gallinule.—Dyker Heights, Mar. 29 (Johnston).

Fulica americana. Coot.—Dyker Heights, Mar. 17 (Hix); West Point Island, N. J., 2,600 (est.), Nov. 11 (Peterson, Herbert, Kassoy and Kuerzi).

Phalaropus fulicarius. Red Phalarope.—4, offshore between Pt. Pleasant and Sandy Hook, Nov. 27 (J. T. Nichols, DuMont, etc.).

Lobipes lobatus. Northern Phalarope.—Barnegat, N. J., Aug. 11 (Urner); East River, near Hunts Point, Bronx, Oct. 25 (Cromwell).

Gallinago delicata. Wilson's Snipe.—75 birds, lower Chatham Bridge, Passaic River, N. J., Apr. 21 (Quattlebaum); Cape May, N. J., Sept. 1 and 3 (Johnston); Bronx Region, Dec. 23 (Bronx County Bird Club); Patchogue, L. I., Dec. 25 (M. A. Nichols).

Macrorhamphus griseus griseus. Dowitcher.—187 (counted), Pt. Pleasant, N. J., July 14 (Urner). Unusually numerous New England and middle Atlantic coast ("Bird Lore," etc.).

Micropalama himantopus. Stilt Sandpiper.—4, Bronx Region, Aug. 12 (Kassoy); 10, Newark Marshes, Sept. 9 (Edwards, Hickey, Herbert and Kuerzi).

Tringa canutus. Knot.—6, Watermill, Mecox Bay, L. I., Dec. 7 (Helmuth).

Arquatella maritima. Purple Sandpiper.—Tod's Neck, Conn., 1, Nov. 1 (J. and R. Kuerzi); 2, Nov. 18 (Allen, Breslau, Peterson, Herbert, Kassoy and Kuerzi); Montauk, L. I., 2, Dec. 6 to 10 (Helmuth and others).

Pisobia maculata. Pectoral Sandpiper.—18, Newark Marshes, N. J., Mar. 18 (Edwards and Urner); Overpeck Creek, April 8 (Baker, Peterson and Hickey).

Pisobia bairdi. Baird's Sandpiper.—Tod's Neck, Conn., May 26 (Hickey); Long Beach, L. I., May 30 (Janvrin); 2, Newark Marshes, Sept. 1 (Edwards); same locality, Sept. 29 (Eaton).

Pelidna alpina sakhalina. Red-backed Sandpiper.—Overpeck Creek, N. J., May 20 (Peterson); Sea Isle City, N. J., July 8 (Peterson, Beal and Stearns); Beach Haven, N. J., 1955, Dec. 9 (Hickey, Kassoy and R. Kuerzi).

Ereunetes pusillus. Semipalmated Sandpiper.—Watermill, Mecox Bay, L. I., Dec. 7 (Helmuth).

Ereunetes mauri. Western Sandpiper.—Tod's Neck, Conn., May 26 (Hickey); Long Beach, L. I., May 30 (Johnston); numerous fall records along the New Jersey coast (Urner, etc.).

Limosa fedoa. Marbled Godwit.—Newark Marshes, N. J., 1, Aug. 22 (Edwards); 2, same locality, Aug. 29 (Edwards and Urner); and Sept. 1 (Kassoy, Kessler, Peterson, J. and R. Kuerzi); 3, Brigantine, N. J., Sept. 2 (J. M. Johnson and Urner).

Limosa haemastica. Hudsonian Godwit.—Newark Marshes, N. J., 2, Aug. 31 (R. Friedman); 2, same locality Sept. 30 (Eaton), and Oct. 13 (J. L. Edwards).

Totanus melanoleucus. Greater Yellow-legs.—Overpeck Creek, N. J., April 6 (Baker, Hickey and Peterson); Brigantine, N. J., Dec. 6 (Walsh); Watermill, Mecox Bay, L. I., Dec. 7 (Helmuth).

Totanus flavipes. Yellow-legs.—250, Newark Marshes, N. J., July 12 (Coolidge and Urner); Long Beach, L. I., Oct. 28 (Allen and Breslau).

Helodromas solitarius. Solitary Sandpiper.—Dyker Heights, April 26 (Watson).

Catoptrophorus semipalmatus. Willet.—Manasquan Inlet, N. J., May 20 (Carter, DuMont and Urner); Oakwood Beach, S. I., May 25 (Cruickshank and Kessler); Tod's Neck, Conn., May 26 (Hickey); Lawrence Beach, L. I., July 7 and 8 (Coolidge); 2, Tod's Neck, Conn., Aug. 6 (Kuerzi); 11, Beach Haven, etc., N. J., Aug. 28 (Urner); Brigantine, N. J., Oct. 4 (DuMont).

Bartramia longicauda. Upland Plover.—Newark Marshes, N. J., July 11 to Aug. 26, maximum of 12 (Urner and many others); Easthampton, L. I., Oct. 7 (Helmuth).

Tryngites subruficollis. Buff-breasted Sandpiper.—Newark Marshes, N. J., Sept. 9 (Edwards); Brigantine, Sept. 16 (Urner); Long Beach, L. I., Sept. 23 (DuMont), and Sept. 24 (Kassoy and Kuerzi); Mecox Bay, L. I., Oct. 1 (Helmuth).

Numenius hudsonicus. Hudsonian Curlew.—Newark Marshes, N. J., Sept. 1 (Kassoy, Peterson, Kessler and Kuerzi).

Squatarola squatarola. Black-bellied Plover.—Overpeck Creek, May 20 (Peterson); 3, Montauk, L. I., Dec. 2 (Bronx County Bird Club); 5, Barnegat Light, N. J., Dec. 9 (Hickey, Peterson and R. Kuerzi); 9, Watermill, Mecox, L. I., Dec. 7 (Helmuth); Montauk, Dec. 22 and 25 (Watson and DuMont).

Charadrius dominicus. Golden Plover.—Westport, Conn., May 6 (DuMont); 3, Newark Marshes, Aug. 26 (Edwards and Urner), 16, same locality, Sept. 23 (Urner, etc.); flock of 50, Easthampton, L. I., Oct. 23 and 24 (Helmuth).

Oxyechus vociferus. Killdeer.—21, Bronx Region, Dec. 26; decrease during January; 10 on Feb. 5, perhaps migrants (Bronx County Bird Club).

Arenaria interpres morinella. Ruddy Turnstone.—Dutchess County, N. Y., May 20 (Crosby, etc.); Newark Bay, N. J., May 20 (Edwards); Tod's Neck, Conn., maximum of 17, June 3 (Kuerzi); 7, Newark Marshes, Sept. 5 (Urner, etc.).

Bonasa umbellus. Ruffed Grouse.—Fairly common resident in less settled portions of Putnam County, N. Y. (Bronx County Bird Club, etc.).

Cathartes aura septentrionalis. Turkey Vulture.—Bronx Region, May 3 (Cruickshank); Croton Lake, Westchester County, N. Y., May 29 (Kuerzi); Pound Ridge, Westchester Co., N. Y., 2, June 3 (Baker); 4, Cold Spring, Putnam County, N. Y., June 10 (Coolidge, Kessler, Kassoy, J. and R. Kuerzi); 26, Bernardsville, N. J., Aug. 13 (Miss Kuser).

Elanoides forficatus. Swallow-tailed Kite.—April 30, unmistakable adult was satisfactorily observed in flight over University Heights, New York City, by Messrs. Hickey and Cruickshank and reported with details at a subsequent meeting of the Society.

Astur atricapillus. Goshawk.—Six birds at various places in the Bronx Region; extreme dates are: Oct. 22 and April 28, Bronx Region (Bronx County Bird Club, etc.); 2, Dyker Heights, Jan. 11 (Johnston).

Haliaeetus leucocephalus. Bald Eagle.—8, Croton Point, N. Y., Feb. 22 (Kuerzi, etc.).

Falco islandus. White Gyrfalcon.—“Convinced that I got an excellent view of a White Gyrfalcon at Cruger's Island, Dutchess County, New York, Feb. 3, which I do not report unless it be acceptable.” (Crosby and Vogt).

Falco columbarius. Pigeon Hawk.—8, Long Beach, L. I., Sept. 24 (Kassoy and Kuerzi).

Pandion haliaëtus carolinensis. Osprey.—Dyker Heights, March 26 (Johnston).

Aluco pratincola. Barn Owl.—Croton Point, N. Y., May 20 (Kuerzi); same date, Dutchess County (Crosby).

Nyctea nyctea. Snowy Owl.—Orient, L. I., March 4 (Latham); Dutchess County, Dec. 16 (Frost, Vogt, etc.).

Ceryle alcyon. Kingfisher.—5, Bronx Region, Jan. 15; 1 on Jan. 22; and 2 on Feb. 5 (Bronx County Bird Club).

Sphyrapicus varius. Yellow-bellied Sapsucker.—Short Hills, N. J., Feb. 19 (Percival S. Howe).

Phlæotomus pileatus abieticola. Northern Pileated Woodpecker.—North Twin Lake, Orange County, N. Y., April 29 (L. N. Nichols); Netcong, Sussex County, N. J., April 30 to May 4 (Mrs. Fry); Sparta, N. J., Aug. 26 (Edwards).

Centurus carolinus. Red-bellied Woodpecker.—Van Cortlandt Park, May 13 (Herbert, Kassoy and Kuerzi).

Antrostomus vociferus. Whippoorwill.—Breeds commonly in western part of Putnam County, particularly near Oscawana Lake, and a few elsewhere (Bronx County Bird Club).

Chordeiles virginianus. Nighthawk.—University Heights, Bronx Region, Oct. 24 (Cruickshank).

Chætura pelagica. Chimney Swift.—Scarsdale, N. Y., April 15 (Coolidge).

Archilochus colubris. Hummingbird.—Darien, Conn., Sept. 30 (Janvrin).

Tyrannus tyrannus. Kingbird.—Ramsey, N. J., April 29 (L. N. Nichols).

Tyrannus verticalis. Arkansas Kingbird.—Tod's Neck, Conn., Aug. 14 (J. and R. Kuerzi); Long Beach, N. J., Sept. 9 (Urner); Long Beach, L. I., Sept. 23 (Baker, etc.).

Myiarchus crinitus. Crested Flycatcher.—Easthampton, L. I., Oct. 5 (Helmuth); Milltown, N. J., Oct. 1 (Collins).

Sayornis phæbe. Phæbe.—Bronx Region, Mar. 6 (L. N. Nichols); Blue Point, L. I., Dec. 27, etc. (M. A. Nichols).

Nuttallornis borealis. Olive-sided Flycatcher.—Central Park, Oct. 2 (DuMont).

Empidonax flaviventris. Yellow-bellied Flycatcher.—Bernardsville, N. J., Apr. 26 (Miss Kuser).

Empidonax virescens. Acadian Flycatcher.—Putnam County, N. J., June 10 (Bronx County Bird Club).

Empidonax trailli alnorum. Alder Flycatcher.—2, Matedeconk River, Laureton, N. J., June 30 (Urner); Princeton, N. J., breeding (H. Curry); Central Park, Sept. 27 (DuMont).

Otocoris alpestris alpestris. Horned Lark.—Bronx Region, Oct. 7 (Kuerzi); 20, Central Park, Nov. 22 to 24 (Cruickshank).

Otocoris alpestris praticola. Prairie Horned Lark.—Dutchess County, May 20 (Crosby); Bridgehampton, L. I., Dec. 8 (Watson and DuMont).

Corvus corax principalis. Northern Raven.—2, Barnegat Region, N. J., Aug. 11; 2, same locality, Nov. 11 (Urner).

Corvus ossifragus. Fish Crow.—Bronx Region, Jan. 23 and 24 (Cruickshank); Feb. 12 (Stearns and Peterson).

Icterus spurius. Orchard Oriole.—Milltown, N. J., May 3 (Collins).

Quiscalus quiscula æneus. Grackle.—Flocks wintered at Passaic, N. J. (Clausen); probably Bronzed.

Pinicola enucleator leucura. Pine Grosbeak.—Rhinebeck, N. Y., Feb. 4 (Crosby).

Carpodacus purpureus. Purple Finch.—Over 100, Van Cortlandt Park, Jan. 19 (Cruickshank); noted in June, near Cold Spring, Putnam County, N. Y. (Ingle).

Loxia curvirostra minor. Red Crossbill.—Flock of 18, Bronx Botanical Gardens, March 16 and 17 (J. and R. Kuerzi).

Acanthis linaria linaria. Redpoll.—Rhinebeck, N. Y., Feb. 5 (Crosby).

Carduelis carduelis. European Goldfinch.—Pelham, Feb. 13 (Johnston).

Spinus pinus. Pine Siskin.—Fairly numerous from late February to early April; noted May 11, Van Cortlandt Park (Cruickshank).

Plectrophenax nivalis. Snowflake.—3, Bronx Region, Oct. 16 (Cruickshank); 2, Tod's Neck, Conn., April 1 (Kuerzi).

Calcarius lapponicus. Lapland Longspur.—Bronx Region, Nov. 9 and 12 (Kuerzi); 3, Wilton, Conn., Nov. 13 (DuMont); 4, Westport, Conn., Nov. 16 (DuMont); Central Park, Nov. 24 (Cruickshank).

Passerculus princeps. Ipswich Sparrow.—Dyker Heights, April 15 (Hix).

Passerculus sandwichensis savanna. Savannah Sparrow.—Montauk, L. I., June 24 (Allen and Watson).

Passerherbulus henslowi. Henslow's Sparrow.—Numerous in certain fields along the Delaware, near Flatbrookville, N. J. (Edwards and Kuerzi); 3, Putnam County, N. Y., June 10 (Kessler, Kassoy, Herbert, J. and R. Kuerzi).

Passerherbulus nelsoni nelsoni. Nelson's Sharp-tail.—Specimen collected, Wilton, Conn., Nov. 13 (DuMont); sight records as follows: Oakwood Beach, S. I., Oct. 7 (L. N. Nichols); Tod's Neck, Conn., Nov. 1 to 4 (Bronx County Bird Club).

Passerherbulus nelsoni subvirgatus. Acadian Sharp-tailed Sparrow.—Tod's Neck, Conn., May 30 (Kessler and Kuerzi); Newark Marshes, N. J., Sept. 30 (Muller and Peterson); Baychester Marshes, Bronx, Oct. 21 (Peterson); 3, Tod's Neck, Conn., Nov. 1; 10, Nov. 4 (outnumbering the common Sharp-tail two to one); one to Nov. 18 (Bronx County Bird Club).

Chondestes grammacus. Lark Sparrow.—Elizabeth, N. J., region, Oct. 28 (Urner).

Zonotrichia leucophrys. White-crowned Sparrow.—Generally pronounced spring flight from May 3 to 20 (Bronx Region, Central Park, northern New Jersey, etc.); relatively abundant in fall from Oct. 7 to the end of the month; noted in the Bronx Region as late as Dec. 15 (R. Kuerzi).

Spizella monticola. Tree Sparrow.—Bronx Region, April 29 (Bronx County Bird Club).

Spizella passerina. Chipping Sparrow.—Passaic, N. J., to Jan. 4 (Edwards).

Melospiza lincolni. Lincoln's Sparrow.—Singing, Scarsdale, N. Y., May 12, 13 (Coolidge); Dutchess County, N. Y., May 13 to 20 (Crosby, etc.); Baldwin, L. I., May 18 and 21 (Baasch); 2, Bronx Region, N. Y., Sept. 23 (Peterson); Garden City, L. I., Oct. 21 (J. T. Nichols).

Passerella iliaca. Fox Sparrow.—Van Cortlandt Park, singing, Sept. 30 (Kuerzi).

Pipilo erythrophthalmus. Towhee.—Passaic, N. J., Jan. 7 to 14 (Clausen); Bronx Region, N. Y., Dec. 26 (Bronx County Bird Club); 3, Ridgewood, N. J., Dec. 26, etc. (Ridgewood Audubon Society).

Cardinalis cardinalis. Cardinal.—Bronx Region, Jan. 1 to March (Bronx County Bird Club); Dyker Heights, Jan. 15 (Johnston); Bronx Region, Oct. 7 to Nov. 13, and Dec. 23 (Bronx County Bird Club).

Zamelodia ludoviciana. Rose-breasted Grosbeak.—Montauk, L. I., April 29 (Latham); Tenaflly, N. J., Oct. 14 (L. N. Nichols).

Passerina cyanea. Indigo Bunting.—Washington Square, New York, May 22 (J. H. Bennett).

Piranga rubra. Summer Tanager.—Montauk, L. I., April 29 (Latham).

Progne subis. Purple Martin.—3, Rye, Bronx Region, April 5; several dozen, April 15 (Bronx County Bird Club); Easthampton, L. I., Sept. 28 (Helmuth).

Petrochelidon lunifrons. Cliff Swallow.—10, Putnam County, N. Y., June 10 (Coolidge, Kassoy, Kessler, J. and R. Kuerzi); Newark Marshes, Sept. 23 (Urner and others).

Hirundo erythrogastra. Barn Swallow.—Kensico, April 6 (Kessler, J. and R. Kuerzi).

Riparia riparia. Bank Swallow.—3, Central Park, Oct. 1 (DuMont).

Lanius borealis. Northern Shrike.—Fairly common throughout, particularly at Montauk, and in Dutchess County; chiefly January and February; Mar. 6, Bronx Region (L. N. Nichols).

Lanius ludovicianus migrans. Migrant Shrike.—Overpeck Creek, March 29 (R. O. Muller); April 4 and 6, same locality (Watson and DuMont); Passaic, N. J., March 31, injured bird (G. S. Yerbury); Tod's Neck, Conn., April 21 (Kuerzi); Newark, N. J., region, Aug. 26 (Johnston); Bronx Region, Sept. 16 (Cruikshank).

Vireosylva philadelphia. Philadelphia Vireo.—Wilton, Conn., Sept. 18 (DuMont); Elizabeth, N. J., Sept. 23 (Urner).

Lanius borealis. Solitary Vireo.—Delaware Water Gap, Dunnfield Creek, N. J., June 16 and 17 (Urner, Carter, Edwards and Kuerzi); Roslyn, L. I., Sept. 1 (Mrs. Fry); Bronx Park, Nov. 5 (Kuerzi).

Vireo griseus. White-eyed Vireo.—Pt. Pleasant, N. J., Oct. 4 (DuMont).

Protonotaria citrea. Prothonotary Warbler.—Pine Brook, Passaic River, N. J., July 29, an eighth of a mile from where the species bred in 1924 (Howland).

Vermivora chrysoptera. Golden-winged Warbler.—Islip, L. I., May 7 (Mrs. H. W. Smith); common breeder in Putnam County, frequently outnumbering the Blue-wings (Kuerzi, etc.); Peekskill, Westchester County, several, June 24 (Kassoy and Kuerzi).

Vermivora lawrencei. Lawrence's Warbler.—Little Falls, N. J., May 20 (Edwards); Eastchester, N. Y., male, May 27 to June 17 (Baker, Eaton, Ingle and Kuerzi).

Vermivora rubricapilla. Nashville Warbler.—Bedford, Westchester County, June 10, in same place as last year and evidently breeding (Baker); Putnam County, N. Y., one pair, June 10 (Bronx County Bird Club); Delaware Water Gap, N. J., 8, June 16 (Urner, Carter, Edwards and Kuerzi).

Vermivora celata. Orange-crowned Warbler.—Central Park, May 16 (Hix); Bronx Region, May 11 and 22 (Cruikshank); Central Park, Sept. 12 and 20 (DuMont); Bronx Region, Sept. 30 (Kuerzi), and Oct. 27 and 28 (Peterson, Herbert, Kassoy, J. and R. Kuerzi).

Vermivora peregrina. Tennessee Warbler.—Shelter Island, Aug. 20 (Allen and Breslau); Port Washington, L. I., Oct. 8 (Mrs. Fry).

Compsothlypis americana usneæ. Parula Warbler.—Cold Spring, Putnam County, June 10 (Ingle); found in several places along the Delaware River, near Flatbrookville, June 17 (Carter, Urner, Edwards and Kuerzi).

Dendroica tigrina. Cape May Warbler.—Garden City, L. I., May 6 (J. T. Nichols).

Dendroica cærulescens. Black-throated Blue Warbler.—Common breeder in high swamps between Cold Spring and Carmel, Putnam County (Bronx County Bird Club); fairly numerous along Dunnfield Creek, near Delaware Water Gap, N. J., June 17 (Urner, Carter, Edwards and Kuerzi).

Dendroica magnolia. Magnolia Warbler.—Several pairs along the Delaware River, near Flatbrookville, N. J., and near the Water Gap, June 16 and 17 (Urner, Carter, Edwards and Kuerzi).

Dendroica cerulea. Cerulean Warbler.—Elizabeth, N. J., region, Sept. 23 (Urner).

Dendroica dominica. Yellow-throated Warbler.—Branch Brook Park, Newark, N. J., May 1 (J. H. Burnett and E. G. Loomis).

Dendroica fusca. Blackburnian Warbler.—East of Cold Spring, Putnam County, June 10 (Bronx County Bird Club).

Dendroica vireus. Black-throated Green Warbler.—Glen Cove, L. I., June 22 (Mrs. Fry); Bronx Region, Nov. 5 (Kuerzi); Alpine, N. J., Nov. 5 (Janvrin); Broadway and 246th St., Nov. 20 (Chubb).

Dendroica vigorsii. Pine Warbler.—Syosset, L. I., Dec. 30 (J. T. Nichols).

Dendroica palmarum palmarum. Palm Warbler.—Over 200, Beach Haven, N. J., Oct. 4, apparently no Yellow Palms (DuMont); Watermill, L. I., Dec. 7 (Helmuth).

Dendroica palmarum hypochrysea. Yellow Palm Warbler.—Dyker Heights, April 4 (Johnston); Bridgehampton, L. I., Dec. 8 (Watson).

Dendroica discolor. Prairie Warbler.—Found breeding in at least two different localities in Putnam County (Kuerzi, etc.); Central Park, April 25 (Watson).

Seiurus noveboracensis noveboracensis. Water-thrush.—Putnam County, east of Cold Spring, June 10, apparently breeding (Bronx County Bird Club).

Oporornis formosus. Kentucky Warbler.—Delawanna, N. J., May 6 (Edwards); Towaco, N. J., June 3 (Eaton); Westchester County; pair, Grassy Sprain; 3 pairs, Worthington; 2 pairs, Rockefeller property, north Tarrytown; Putnam County: 1 pair, near Oscawana Lake; all of above pairs breeding (Bronx County Bird Club).

Oporornis agilis. Connecticut Warbler.—Central Park, Sept. 20 (DuMont); Bronx Region, Sept. 16 to Oct. 3, maximum of three, Sept. 26 (Kuerzi); 5, Milltown, N. J., Sept. 23 (Collins).

Oporornis philadelphia. Mourning Warbler.—Dutchess County, May 20 (Crosby); 3, Central Park, May 29 (Miss Capen and many others); June 5 (numerous observers); Bronx Region, May 30, and June 1, maximum of 4 (Cruickshank, Kuerzi, etc.).

Geothlypis trichas. Maryland Yellow-throat.—Staten Island, Dec. 25 (Peterson and Cruickshank); Troy Meadows, N. J., Dec. 26 (John W. Thompson and Nelson Lake).

Icteria virens. Yellow-breasted Chat.—Glen Cove, L. I., June 22 (Mrs. Fry).

Wilsonia citrina. Hooded Warbler.—Verona, N. J., May 2 (Mrs. Hegeman).

Wilsonia canadensis. Canadian Warbler.—Common breeder in the higher swamps of Putnam County between Cold Spring and Carmel (Bronx County Bird Club); fairly common along Dunnfield Creek and elsewhere near Delaware Water Gap, N. J., June 16 and 17 (Urner, Carter, Edwards and Kuerzi).

Anthus rubescens. Pipit.—35, Clason Point, Bronx, Dec. 23 (Bronx County Bird Club); Overpeck Creek, N. J., Jan. 15 (Peterson); Elizabeth, N. J., Jan. 22 (Eaton).

Mimus polyglottos. Mockingbird.—Barnegat, N. J., Jan. 9 (Kuerzi); Central Park, Mar. 15 to April 3 (Miss Capen, etc.); Garden City, L. I., Mar. 17 (J. T. Nichols); Point-o'-Woods, L. I., Sept. 5 (Mrs. H. W. Smith); Dyker Heights, Sept. 9 (Hix).

Dumetella carolinensis. Catbird.—Hastings-on-Hudson, Dec. 23 (Vogt); Bronx Region, N. Y., Dec. 23 (Bronx County Bird Club); Coldspring Harbor, L. I., Feb. 17 to Mar. 23 (Mrs. Fry).

Toxostoma rufum. Brown Thrasher.—Bronx Park, Mar. 4 (Johnston).

Thryothorus ludovicianus. Carolina Wren.—Numerous records, of which the following seem notable: Islip, L. I., Jan. 8 (Mrs. H. W. Smith); bred at Croton Point and near Worthington, Westchester; 3, Dec. 26, Bronx Region (Bronx County Bird Club); Putnam County, N. Y., June 10 (J. and R. Kuerzi).

Nannus hiemalis. Winter Wren.—Probably bred in hemlock swamp north of Peach Lake, Putnam County; discovered in song on June 30 (Eaton, Coolidge and Curry); still present and singing "in snatches" July 3 (Kuerzi).

Cistothorus stellaris. Short-billed Marsh Wren.—Oakwood Beach, S. I., June 16 (Johnston); a pair or two bred on Croton Point (Kuerzi, etc.); several, Cold Spring, Putnam County, June 10 (Bronx County Bird Club); Garden City, L. I., Oct. 21 (J. T. Nichols).

Telmatodytes palustris. Long-billed Marsh Wren.—Bronx Region, April 15; Dec. 23 (Bronx County Bird Club).

Thryomanes bewickii. Bewick's Wren.—Central Park, probable on April 10; positively identified on April 20 (Miss Capen, etc.); present up to May 8 (Mrs. Edge); singing freely during the early part of its stay; seen also by Crosby, DeW. Miller, Watson, Carter, etc.

Certhia familiaris americana. Brown Creeper.—North Tarrytown, Westchester, singing on June 20 (Kuerzi); Cold Spring to Carmel, singing, July 1 (Kuerzi).

Sitta canadensis. Red-breasted Nuthatch.—Barnegat Light, Oct. 4; same date, Beach Haven, N. J. (DuMont).

Bæolophus bicolor. Tufted Titmouse.—2, Easthampton, L. I., Dec. 6 to 10 (Helmuth).

Regulus satrapa. Golden-crowned Kinglet.—Bronx Region, May 11 (Cruickshank).

Regulus calendula. Ruby-crowned Kinglet.—Patchogue, L. I., Dec. 25 (M. A. Nichols); Bronx Region, Dec. 26 (Bronx County Bird Club).

Polioptila caerulea. Blue-gray Gnatcatcher.—Newark, N. J., April 11 (Haulenbeck); Central Park, April 14 (Miss Capen); Englewood, N. J., April 29 (Allen); Bronx Region, April 29 (Bronx County Bird Club); Central Park, May 2 (Hix); Bronx Region, May 11 to 27, maximum of 3 (Bronx County Bird Club); late in May, nest found near Swartswood Lake, N. J., by R. G. Furness, and reported in detail; Bronx Region, Sept. 30 (Peterson and Kuerzi); Barnegat Light, N. J., Oct. 4 (DuMont).

Hylocichla fuscescens. Wilson's Thrush.—Coldspring Harbor, L. I., June 8 (Mrs. Fry).

Hylocichla ustulata swainsoni. Olive-backed Thrush.—Bronx Region, May 1 (L. N. Nichols); Tod's Neck, Conn., Nov. 4 (Kassoy and Peterson).

Hylocichla guttata pallasi. Hermit Thrush.—Central Park, June 5 and 6 (Miss Capen, etc.).

Ixoreus naevius. Varied Thrush.—“Under observation for about twenty minutes, on Nov. 10, 1928, near Ossining, N. Y., about size of a Robin with broad, black band around throat and breast, and throat orange brown, with orange brown stripes on wings and bands on each side of head of same color”; seen by Miss Mary Sheridan, and reported in detail to Mr. Ludlow Griscom who kindly supplied this interesting information.

The Ornithological Year 1929 in the New York City Region

BY JOHN F. KUERZI

The early part of 1929 was, like January of the preceding year, unusually "open," particularly on the north-east edge of the Atlantic seaboard. It was characterized (again like 1928) by the exceptional abundance of winter records of half-hardy landbirds, and species generally whose normal winter range is farther to the south. Waterbirds tended to remain far to the north of their usual winter quarters, owing perhaps to the abnormal open water conditions prevailing near New York, and generally from Washington, D. C., to Boston, Mass. Perhaps this same situation induced an altogether unprecedented number of shorebirds to remain well into winter (mid-January), not only along the New Jersey coast (where seven species were observed on January 13), but even to some extent on Long Island (Black-bellied Plover, Montauk, January 20, etc.) considerably farther north and east. It may be remarked, parenthetically, that these are in a sense winter records, though it should be borne in mind that the actual "dead of winter" does not generally begin to prevail in this region until toward the latter part of January. *Alcidae* of several species apparently wintered, to some extent at least, appreciably farther south than is usually the case. At any rate there were far more reports of the presence of Razor-billed Auks, Brünnich's Murres and Dovekies in numbers, off the coast of the east end of Long Island during the latter part of December (1928) and through January (1929). The combination of these circumstances and conditions made the seacoast unusually attractive and of extraordinary interest to New York "birdists," during January of 1929.

During the latter part of the month, the Redpoll appeared in various localities about New York, and by February 10 the species had become generally distributed in the Bronx Region and adjoining territory, where as many as 75 or more could be seen in a few hours afield. It is probable that the peak of abundance of the species was reached locally during the second week in February. At any rate, observations would seem to indicate a general subsequent decrease in the birds up to the first week in March when a secondary peak of abundance was evidently reached. This in turn was followed by a

rapid decrease, though a few of the birds remained about until March 18.

Red Crossbills were noted in several places about New York during this period. A flock of 15 to 20 of this species was observed at the Bronx Botanical Gardens, March 18 to 20. It is perhaps significant that for the past four years, this species has occurred between March 15 and 20, in one definite spot at the Botanical Gardens, the number of individuals seen (for at least three years) remaining more or less constant. This is an exceedingly interesting instance of a species,—usually considered “rare and erratic,”—a few individuals of which systematic observation has shown to be remarkably regular, at least in spring. Of course, it may well be that the observations cited above possibly refer to the same group of birds but it seems none the less noteworthy that even a small group of the species should have so pronounced an element of regularity about its arrival, both with regard to time and place. So that it would appear that a few individuals of even the so-called more irregular migrants have at least a trace of regularity about their movements which, in some instances at least, has thus far remained undetected.

The advent and progress of spring was, in its first stages, notably early and “culminated in two unseasonably hot, summer-like days, namely April 7 and 8” (J. T. Nichols, *Bird-Lore's* “Season”). The second week of April came as a marked contrast,—the weather cold, cloudy and rainy, and the advance of spring and the spring migration of birds, generally retarded and barely perceptible. Birds in general tended to return from the South in numbers at about average dates but a more or less well-marked tendency on the part of a few individuals of certain species to arrive earlier than the species generally was “a definite feature of the season” (J. T. Nichols, *Bird-Lore* “Season,” etc.) Such observations (of early, sporadic arrivals) considered separately and without regard to general conditions, would obviously change the complexion of the migration altogether, from a more or less average one, into an unusually early one. It seems evident, however, that relatively only an exceedingly small element or proportion of certain species tended thus to arrive; the balance of these same species appearing about on time, or only a day or two in advance or behind the normal schedule. With the increase of observers submitting reports, as has been shown, the total number of unusually early dates

of arrival in almost any year is bound to increase proportionately, and such records, considered in themselves, would seem to point this year to a general early movement of birds. When due allowance and consideration is given this relatively important factor, however, such early dates become less significant of general conditions, and the migration is seen in truer perspective; i.e., early for a few individuals of certain species; normal or average for the bulk of individuals of all species. To illustrate this point, we may cite the occurrence of Osprey and Yellow Palm Warbler, in the New York Region and in the North-east generally, during the spring.

There was doubtless an early flight composed of a comparatively small number of Fish Hawks which arrived in Washington, D. C., New York and Boston in mid-March, the 16th being perhaps, the earliest record (Van Cortlandt Park, etc.). This was followed, at least in the Bronx Region, by a temporary absence of Ospreys until late in the month, when the species began to appear in normal numbers.

The Yellow Palm Warbler arrived on March 24, an early record (Van Cortlandt Park), but was far from being generally distributed until perhaps April 8 or 9, by coincidence the average arrival date of the species locally.

In commenting upon these occurrences in *Bird-Lore's* "Season," Mr. Nichols aptly remarks: "In both cases, the earliest date of record is in the Bronx Region, perhaps correlated with a concentration of both migrants and observers at this favorable point on a main migration route."

The weather up to mid-April was rather unusually mild and vegetation was correspondingly advanced. A decided change occurred, however, toward the middle of the month when continuously cool, generally wet weather set in—a condition which prevailed practically through May. The tendency on the part of a few individuals of certain species to arrive well in advance of the main body of these same migrants, noted in the foregoing part of this account, persisted well after the turn in the weather, illustrating an interesting element of "migrational inertia," a factor which evidently controls the movements of birds to some degree. Migrating birds generally do not appear to respond instantly to exact weather conditions at a given point,

nor do they seem to react immediately to changes in such conditions; in general an early migration will frequently continue as such for some time after weather conditions become adverse, seeming to establish the importance of considering weather factors to the south of a given point, in their relation and bearing upon the arrival of birds at that point.

To complicate analysis of the migration further, a storm of hurricane nature swept portions of the gulf and south-Atlantic states in mid-April and its effects were felt north and east to the New England coast. Various small southern land-birds such as Summer Tanager, Gnatcatcher, etc., appeared simultaneously in New York and New England, doubtless as strays, while the migration of the Indigo Bunting, for instance, became sadly demoralized; the species appearing in Boston, we are told, somewhat in advance of its normal arrival date in Washington, D. C.

In the whole North-east, the normal May waves of migrants were decidedly less marked than is usual, many transients being most numerous at approximately average dates, and with the exception of May 10, when a fairly well-marked peak was reached, on the majority of days observers reported relatively few species and fewer individuals of migrants from most localities about New York.

Yellow Palm Warblers were exceptionally abundant from April 20 to 25 (for instance, 200 Central Park, April 21), and the suggestion has been made that some relation may exist between this unusual abundance of the birds and the species' early appearance; both facts perhaps pointing to a change in migration route. Golden-winged Warblers, generally uncommon in New York on migration (even in areas directly south of which the species breeds), were doubtless of more general distribution during May. Several new dates of arrival for this species and the Hooded Warbler were established. An interesting early flight of birds was recorded generally in the New York area from April 26 to 28, bringing Orchard Oriole, Redstart, Least Flycatcher, Prairie, Worm-eating and Hooded Warblers and Short-billed Marsh Wren to the Bronx Region, April 28. At about the same time exceptionally late dates were reported for several species of ducks, as follows: Canvasback, Speonk, L. I., May 1; Bufflehead,

Bronx Region, May 5; Widgeon, Mastic, L. I., May 11; Blue-winged Teal, Troy Meadows, N. J., May 30 (may have bred).

A most interesting casual occurrence was that of the Little Gull. First noted in New York harbor with Bonaparte's Gulls on May 6, by Dr. J. P. Chapin, the species next appeared on the Newark Marshes, where it was carefully observed on May 12, and reported in detail in *The Auk* by Messrs. Edwards and Eaton; two days later, probably the same bird was seen, in the same locality, by Mr. Urner. The species was subsequently observed along the New Jersey coast at Point Pleasant, N. J., on the afternoon of August 11 (Edwards, Herbert, Urner, Walsh), and was last seen locally on January 1 and 2, 1930, at Georgica Pond, Easthampton, L. I. (Helmuth). See *Auk* XLVI, No. 3, p. 376 and 377; XLVI, No. 4, p. 532, and XLVII, No. 4, p. 528. Never more than one bird was observed and it is interesting to speculate whether or not the observations were all of the same individual bird and if so, to trace its wanderings in seeing the "edge of the new world."

As usual, practically all of the active observers were interested in securing the best possible one-day lists for their respective areas, and the fact that much friendly rivalry existed between "local regions" as well as exponents thereof, merely served to add further zest to the chase.

The laurels for 1929, for this fascinating diversion were unanimously awarded to Mr. C. A. Urner and other members of the Society who carefully planned a route from Troy Meadows and Boonton, N. J., to Newark Bay, and south to Barnegat and Brigantine, N. J., including practically all favorable points in this exceptionally attractive area. The initial attempt was made on May 17, when Messrs. Urner, Edwards, Walsh and Kuerzi went over the route as planned. By scouring this region from the small hours until long after dark, these enterprising observers contrived to accumulate the almost incredibly large list of 154 species; two of the observers seeing or hearing all of the birds. The day was in no way exceptional; there was no marked flight of warblers or other small migrant landbirds. The success of the attempt was largely due to accurate knowledge of the country, including exact information concerning the precise location of the rarer breeders and the probable whereabouts of migrants.

Few true rarities were found and several fairly common summer residents had presumably not yet arrived and thus could not be added. A good flight of shorebirds was observed at Brigantine in the late afternoon, which served to fill many of the up-to-then-existing gaps. The list is unquestionably the largest and probably the most representative of its kind ever made under similar conditions, by one party of observers in a day afield in the New York area.

Not content with this noteworthy achievement, Mr. Urner in characteristically tireless fashion, went over the same area, with an entire change of personnel, on May 19, and succeeded in practically duplicating the list of May 17, and in getting within one species of that record-breaking list, seeming to indicate that this region is capable of producing a list of 150 species of birds or better, on an average mid-May day.

In Dutchess County, N. Y., a one party list of 127 species on May 19 (Crosby and others), is comparable in certain respects to a list of 133 species by one party in the Bronx Region, on the same date (Herbert, Kassoy, Matuszewski, Kuerzi). All of these one day census lists reflected conditions in a quite representative fashion; in general, almost all possible species were present; there were few noteworthy rarities and the majority of migrant species were present in relatively small numbers.

During June, various members undertook organized surveys of the breeding birds of several less known localities of the New York area. In addition to the usual cooperative Wyanokie, N. J., census, several further trips were made to portions of Putnam County, N. Y., which had not been thoroughly worked last year, and many interesting additional data were obtained, particularly bearing upon the distribution of certain Canadian species, such as Solitary Vireo, Blackburnian, Nashville, Canadian and Black-throated Blue Warblers, Brown Creeper, Hermit Thrush, etc., in that region. Numbers of observers made trips to localities in which they were particularly interested, and Messrs. Edwards and Urner systematically worked Troy Meadows, near Boonton, N. J., and other attractive localities in the interior of the state, in June.

Prairie Horned Lark and Upland Plover were found breeding near Lamington, Somerset County, N. J., during the month (Miss

Kuser). It is also possible that a pair of the latter species bred on the Newark Marshes, N. J. At all events, a singing bird was observed there in mid-May (Kenneth Nelson) and on June 30, 4 birds (1 singing) were found near the same spot and had at least the appearance of a family group (Edwards, Urner).

Late in the month, a preliminary survey was made of the breeding birds of Orange County, N. Y., but owing to lack of time and of familiarity with the country, a representative list was not obtained. In general, the outstanding feature of the trip was the discovery of the Upland Plover, evidently breeding in at least three locations in the County; one pair near Washingtonville (previously reported by Matuszewski), another near Goshen and a third not far from Middletown. A more exhaustive (and perhaps exhausting!) survey of this area is planned for 1930.

From late June until early September, the weather was unusually dry, and late in the season this condition assumed the proportions of a drought. In most other respects the summer was a rather moderate one. Coastwise, shorebirds returned early and appeared to be passing in good numbers, though there were distinctly fewer of the rarer species than were present last year.

An interesting casual occurrence is that of the Dovekie off Montauk in summer, concerning which Mr. Latham writes (in a letter to Mr. J. T. Nichols): "They [the Dovekies] were there as late as the second week in July. I did not have an opportunity to follow them up. A dozen were seen in one day, scattered birds, the nearest to land within half-a-mile of the [Montauk] lighthouse. I took two birds for my local collections, one the last week in June, and the other the first week in July. The last was a female in full summer plumage and the first a male in about full summer plumage."

The most noteworthy feature of the summer was the unprecedented invasion of southern herons. Looking back over the past five years, it is evident that the numbers of these birds reaching the latitude of New York in summer have, with a few exceptions, increased from year to year; it is equally apparent that this summer has set a new high record. Whether, as has been suggested, this increase is due to more adequate protection of the birds on southern breeding grounds, or whether it is related to exceptionally dry coastwise conditions, or

with the rendering unfit of many favorable localities for the birds south of New York, or to all three factors, is not altogether clear. It is quite obvious, however, that there is a more decided element of regularity about the appearance of the Egret and Little Blue Heron locally (both were formerly subject to considerable variation in numbers from year to year, and occasionally were almost entirely absent) and their recent occurrence locally shows a decided upward trend, if represented graphically.

A great concentration of both Little Blue Herons and Egrets occurred at Newark Bay, N. J., and in the Troy Meadows; in the latter locality particularly, since conditions there were unusually favorable. Farther south, along the New Jersey coast, both species were very plentiful; the Little Blues apparently outnumbering the Egrets 10 to 1. On August 6, over 250 Little Blue Herons were observed at Barnegat, N. J. (Urner, etc.).

With white herons unprecedently plentiful in the North and their numbers being steadily augmented from day to day, the question naturally arose: Is it not possible that at least straggling individuals of certain other southern herons may be with the birds? Many thought it possible, others were firmly convinced, some few were skeptical. Meanwhile, an air of suppressed excitement prevailed, perhaps best manifested by a general eagerness to "keep an eye" on the herons. This tense condition prevailed until the morning of August 5, on which memorable date Mr. Lester Walsh discovered a single Snowy Heron on Troy Meadows, N. J., with other white herons. The news spread like proverbial "wild-fire." Everyone felt that Mr. Walsh was to be congratulated on a timely and splendid bit of field identification, constituting the first recent local record for a, until lately, vanishing, southern species.

In the meantime (on August 7) Mr. Walsh found two Snowy Egrets in the same locality and the birds were subsequently seen there by many other well known observers, including Mr. Urner; August 25 is evidently the latest local record for this noteworthy species. The Yellow-crowned Night Heron was reported (mostly in immature plumage) in several localities on Long Island and in New Jersey, and as many as nine were seen at Brigantine, N. J., on August 11. A single

Louisiana Heron was observed at Georgica Pond, Easthampton, L. I., August 9 and 10 (Helmuth), another noteworthy occurrence.

The return migration of small landbirds was mainly rather uneventful—birds passing through quietly in a more or less continuous stream. There were few days on which migrants appeared to be particularly numerous and few noteworthy early arrivals. A general southward invasion of Red-breasted Nuthatches took place about September 12, we are told, from the coast of Maine to Cape Cod, Mass., but was barely traceable in the New York Region. Normal weather continued through September and into October, and it was not until mid-October that the first light frosts occurred near New York. During the first half of October migrant landbirds were abundant, particularly coastwise.

The fall migration of ducks along the south shore of Long Island apparently began early and was remarkable for the presence of many of the rarer species, certain of them in some abundance. For instance, on October 6, at Guggenheim Pond, Jones Beach, L. I., at least four European Widgeon were observed among about 250 Baldpate; in the same general group were Galdwall (1) and Shoveller (2), in addition to many of the commoner species (Kessler, Kuerzi). The fall flight of Ruddy Duck was one of the heaviest in years, upwards of 350 birds of this species being observed on certain of the ponds near Southampton, L. I., November 23, some of which remained into early winter (Wilcox, Kassoy, J. and R., Kuerzi). Ring-necked Duck (rare on Long Island) arrived October 22, and was observed on several different occasions in November, near the eastern end of the Island.

Tree Sparrows arrived in force at unusually early dates,—the first of the season being noted on October 4, Bernardsville, N. J. (Miss Kuser), and October 8, Roslyn, L. I., 6 (Mrs. Fry). Of exceptional interest were the collection of Dickcissel and White-winged Dove on Long Island, in mid-October and mid-November respectively (Wilcox). Various notable—mostly late—records were obtained for certain of the smaller landbirds during this period. Other records of exceptional interest were: Common Tern, Orient, L. I., November 26 (Latham), perhaps comparable with an observation of the same species at Long Beach, L. I., November 28, 1924 (Kessler, J. & R., Kuerzi); Black Guillemot, Montauk, L. I. November 5, early (Wilcox, Kassoy.

J. and R., Kuerzi, etc.) ; Raven, 5, Barnegat Region, N. J., November 10 (Urner, Edward, Walsh) appearing to indicate that the pair of birds of this species under observation in that region during the past few years, eventually succeeded in successfully raising a brood of young. A Black Skimmer in the same region, on the same date, apparently sets a new late record for the species, in this latitude.

An altogether mild and pleasant fall changed abruptly to winter on Thanksgiving (November 28 and considerable unseasonably cold weather was experienced during early December, with several snow storms. With it came reports of an encouraging nature, of the presence of rare northern birds in unusual abundance north of New York along the Atlantic seaboard. Conditions remained normal about New York until practically Christmas week.

Those who were planning to make systematic bird censuses in this region found the outlook rather discouraging and the chances for a record-breaking list of birds correspondingly slight. On December 22, however, ten members of the Bronx County Bird Club ranged themselves in four parties, and undertook a well organized canvass of the entire region south of Croton Point, Kensico Reservoir and Tod's Neck (an area of about 25-mile diameter). Scarcely a swamp, pasture or woodlot in the region remained unvisited on that date. In the evening the observers joined forces and discovered to their amazement that they had recorded 93 species of birds and upwards of 12,000 individuals, in this section—truly an unprecedented achievement ornithologically! The previous highest count was 83 species, two years ago, on virtually the same date, in a rather more restricted area. Those who were able to make additional observations this year, immediately preceding and following the census date, feel that despite their arduous efforts, perhaps no less than six species were overlooked. Thus it would seem that a list of 100 species is somewhat more than a theoretical possibility in Bronx, Westchester and Fairfield Counties in winter. It appears that this region is unrivalled along practically the entire north-Atlantic seaboard, for variety of bird-life, at this season, in so restricted an area.

A casual analysis of this list would seem to lead to certain interesting conclusions :

First: An extraordinary influx of birds of all kinds must have occurred immediately preceding the census date, presumably from farther north and perhaps induced by a sudden freeze.

Second: There were unquestionably more than the usual supply of half-hardy species which, though not regular winter residents, occasionally linger well into winter. These include the Pied-billed Grebe and a few of the less hardy ducks (Shoveller, Green-winged Teal, Wood Duck, etc), Mourning Dove, Kingfisher, Sapsucker, Cowbird, Red-wing, Grackle, Pipit, Marsh Wren, Red-breasted Nuthatch, Brown Thrasher, Hermit Thrush, Bluebird, etc.

Third: It is pleasing to note the presence of three southern species, formerly quite well established in the Bronx Region but since virtually extirpated, viz.: Cardinal, Carolina Wren and Tufted Titmouse, which might lead us to the belief that at least two of them are coming back.

Fourth: There was a gratifying increase in the variety and abundance of waterfowl over former years, in excess of twenty species of loons, grebes, ducks and geese being observed.

Fifth: The presence of seven species of owls on the list is perhaps an indication of the thoroughness of the observers.

However, it ought to be borne in mind that apparent increases or decreases based upon one day's observations are not necessarily indicative of conditions generally prevailing, and while it is obvious that certain species were far more abundant this year than last, this may merely indicate a general influx or migration resulting in temporary localization or concentration of the birds. Certainly the hawks were unquestionably more numerous than for several years back, but it is also unfortunately true that the total number of these birds observed annually is steadily decreasing. Another interesting fact was the observation of several Pine Grosbeaks in the Bronx Region as well as in northern New Jersey, the fore-runners of a more or less generally distributed southward flight of this handsome species. In the Elizabeth and Essex County, N. J., Region, where birds were presumably more abundant than they had been earlier in the month, a list of 71 species, which included a Kumlien's Gull and several Lapland Longspurs (Urner, Carter, Eaton, Edwards, etc.) was obtained on December 22.

By way of conclusion, we may perhaps be pardoned a bit of generalization. It is the feeling of many New York ornithologists that birds generally, with a few notable exceptions, are increasing in the latitude of New York but whether this is due altogether or merely partially to more adequate protection or to increased adaptability of birds or is merely an impression arising from concentration or localization of the birds over remaining favorable areas, is not altogether clear. Another important factor with definite bearing upon the problem, as has been frequently pointed out, is the increase in systematic observation in this region, particularly during the last decade, so that data of this recent period, even for the more outlying edges of the region, such as Barnegat, N. J., and Montauk, L. I., are far more comprehensive and complete than formerly. For this reason, comparisons of present day conditions with those of even the immediate past are not always as significant as they may seem. Whether or not the total number of individuals of many species occurring about New York is actually greater from year to year, is occasionally problematical; it would certainly appear to be greater in many instances. What is more certain, however, is that, if measured by specified units of field observation over the same area, very definite changes evidently occur in the local status of a considerable number of species; a few even from year to year. For instance, eight years ago Glaucous and Iceland Gulls were notable rarities about New York though by 1925 both species had increased to the extent that few New York ornithologists "had their horns exalted" by seeing either or both species locally, even in numbers. The last two years, however, have witnessed an almost total reversal of conditions; both of these species are now again practically as rare as they were eight years ago. Such changes occurring in the status of local bird-life (which can perhaps best be measured by counts of birds over prescribed areas, by one or more observers, in a definite time period), add materially to the interest of ornithology. The Society has been compiling relative data on the distribution and abundance of local bird-life, some of which, we hope, will eventually be mapped or plotted graphically. Many comparative generalizations of significance, particularly affecting such changes, may then be drawn.

And while we are digressing, perhaps we may be permitted a word or two about the nature and spirit of the field-workers of New

York. It has frequently been said that as a group they are difficult to match for enthusiasm, keenness and reliability of observation, energy and other desirable ornithological attributes. It is, however, their spirit of friendliness and friendly cooperation which doubtless draws observers together and tends to make life-long friends out of chance ornithological acquaintances. The bond of a deep common interest and the sharing alike of many memorable experiences are, of course, added factors which tend further to enhance this general result. Many of us look in retrospect upon these past two years with countless pleasurable remembrances of days spent with fellow members of the Society and of notable experiences with which many of them are intimately connected. It is a fact that bird-study under almost any conditions adds a definite joy to living. If, however, the element of friendship, a sporting sense of competition and real companionship are added, life itself frequently takes on added meaning and significance. Certain it is that these have been memorable years,—who knows but what, for some, they may have been “among life’s better years.”

Thanks are due to the membership of the Society whose cooperation has made possible this compilation of notes. We are particularly indebted to Mr. J. T. Nichols who has generously turned over much of his correspondence in connection with *Bird Lore’s* seasonal report, some of which, for obvious reasons, does not find its way into either the minutes of the Society or *Bird Lore’s* “Season.” We have drawn freely upon this valuable matter. In addition, Mr. Nichols’ excellent bi-monthly summaries of local conditions which are always of great interest to bird students, have been of invaluable assistance, not only in the selection of feature material but also because of the thoroughly scientific and philosophical manner in which his material is presented, and his data related and correlated. His work has resulted in the presentation of numerous interesting and original inferences and conclusions with respect to birds, their seasonal, relative abundance, and the peculiarities and general characteristics of their movements. We are also greatly indebted to Mr. Charles A. Urner, President of the Society, and to Mr. Warren F. Eaton, for having critically read the manuscript for accuracy of content and style of presentation and to Mr. William Vogt for carefully reading and editing the entire, original compilation of notes. Others have been of assistance in offer-

ing concrete suggestions and in other ways for which we wish here to make grateful acknowledgment.

Podilymbus podiceps. Pied-billed Grebe.—Kensico, Jan. 2 (J. and R. Kuerzi); Troy Meadows, April 21 (Urner); Wampus Lake, Westchester, July 20, probably bred (J. and R. Kuerzi); Bronx Region, Dec. 22 (Bronx County Bird Club).

Cephus grylle. Black Guillemot.—Manhattan Beach, Jan. 6 (Cruickshank); in the surf off Montauk, L. I., Nov. 5 (Wilcox, Kassoy, J. and R. Kuerzi).

Uria lomvia. Brünnich's Murre.—Tod's Neck, Conn., Jan. 8 (J. and R. Kuerzi).

Alca torda. Razor-billed Auk.—1 dead bird, Southampton, L. I., Jan. 20 (Kassoy, Peterson, J. and R. Kuerzi); Manhattan Beach, Jan. 6 (Cruickshank).

Alle alle. Dovekie.—1 dead bird, Southampton, L. I., Jan. 20 (Kassoy, Peterson, J. and R. Kuerzi); 1 dead, Barnegat, N. J., Feb. 10 (Urner, Walsh, Johnson, Rogers, Kuerzi, Kassoy, etc.); in summer off Montauk, L. I., as follows: "They [Dovekies] were there as late as the second week in July. . . . A dozen were seen in one day, scattered birds, the nearest to land within half a mile of the [Montauk] Lighthouse. I took two birds for my local collection, one the last week in June and the other the first week in July. The last was a female in full summer plumage and the first a male in about full summer plumage." (Roy Latham); also one bird, Montauk, L. I., Dec. 15, 1929 to Jan. 5, 1930 (Peterson, Herbert, Kassoy and J. and R. Kuerzi).

Stercorarius longicaudus. Long-tailed Jaeger.—Dutchess County, N. Y., specimen secured, Sept. (Allen Frost).

Stercorarius parasiticus. Parasitic Jaeger.—73, Oakwood Beach, S. I., Oct. 6 (L. N. Nichols).

Rissa tridactyla. Kittiwake.—20, Southampton, L. I., Feb. 22 (Nelson and J. and R. Kuerzi).

Larus hyperboreus. Glaucous Gull.—Hudson River, Riverdale, Jan. 27 (Cruickshank); one or two other reports during the year, the data on which are not on hand.

Larus leucopterus. Iceland Gull.—Still decidedly rare though a slight increase in reports during the early part of 1930, mostly from Montauk Point and the New Jersey coast.

Larus kumlieni. Kumlien's Gull.—Newark Bay, Dec. 23 (Urner and Carter).

Larus philadelphia. Bonaparte's Gull.—20, Montauk, L. I., Jan. 20 (Kassoy, Peterson, J. and R. Kuerzi); Oakwood Beach, S. I., Feb. 12 (Watson).

Larus minutus. Little Gull.—First noted, New York Bay, May 6 (Chapin); Newark Bay, N. J., May 12 (Edwards and Eaton); same locality, May 14 (Urner); Point Pleasant, N. J., Aug. 11 (Edwards, Herbert, Urner and Walsh); Easthampton, L. I., Jan. 1 and 2, 1930 (Helmuth). See *Auk*, Vol. XLVI, No. 3, p. 376-377; XLVI, No. 4, p. 532; XLVII, No. 4, p. 528, etc.

Sterna caspia. Caspian Tern.—Bridgehampton, L. I., May 9 (Helmuth); Oakwood Beach, S. I., May 18 and 22 (Hix and Brody); Brigantine, N. J., May 26 (Johnston and Walsh); Bridgehampton, L. I., four times between Sept. 24 and Oct. 5 (Helmuth).

Sterna hirundo. Common Tern.—Orient L. I., Nov. 26 (Latham).

Sterna forsteri. Forster's Tern.—Eastern Long Island, 39 times between July 16 and Oct. 16; maximum 70, Aug. 18 (Helmuth). See *Auk*, Vol. XLVII, No. 4, p. 528, etc.

Sterna fuscata. Sooty Tern.—Montauk, L. I., much decomposed, Jan. 20, probably referable to September flight (Peterson, Kassoy, J. and R. Kuerzi); recently dead, Orient, L. I., Oct. 7 (Latham).

Hydrochelidon nigra surinamensis. Black Tern.—Dyker Heights, May 15 (Hix); Speonk, L. I., May 24 (Wilcox); Montauk, L. I., May 30 (Wilcox); Easthampton, L. I., June 6 (Helmuth); Dyker Heights, Aug. 11 (Hix); Mastic, L. I., Oct. 13, late (J. T. Nichols).

Rynchops nigra. Black Skimmer.—Easthampton, L. I., Oct. 16 (Helmuth); Barnegat Bay, N. J., Nov. 10 (Oscar Eayre and Walsh).

Puffinus griseus. Sooty Shearwater.—Picked up dead, May 26, dead for about a week, early, Speonk, L. I. (Wilcox).

Sula bassana. Gannet.—Montauk, L. I., Jan. 20, 5 flying east (Peterson, Kassoy, J. and R. Kuerzi).

Phalacrocorax carbo. Cormorant.—Mr. Helmuth has the following sight records, mostly for Gardiner's Bay, L. I.: 1 immature with four Double-crested, Mecox to Montauk, July 31; 2 immature, Aug. 25; 2 Sept. 1, and 4 Sept. 2, with Double-crested. See *Auk*, Vol. XLVII, No. 4, p. 528, etc.

Phalacrocorax auritus. Double-crested Cormorant.—Mecox to Montauk, daily since July 4; 41, July 31 (Helmuth).

Mergus serrator. Red-breasted Merganser.—Moriches Bay, L. I., Sept. 2, five females or juvenals (J. T. Nichols); 10, near Easthampton, L. I., Aug. 9 and 18 (Helmuth).

Lophodytes cucullatus. Hooded Merganser.—Dutchess County, April 21 (Crosby); Speonk, L. I., Oct. 3, early (Wilcox).

Chaulelasmus streperus. Gadwall.—Mastic, L. I., pair, March 31 (J. T. Nichols); Dutchess County, N. Y., April 4 (Crosby); six, probably three pairs, Quogue, L. I., April 6 (J. and R. Kuerzi); Troy Meadows, N. J., Sept. 22 (Walsh); Guggenheim Pond, Jones Beach, L. I., Oct. 6 (Kessler and Kuerzi).

Mareca penelope. European Widgeon.—Newark Marshes, N. J., Jan. 6, drake (Urner); Croton Point, N. Y., March 31 (Kuerzi); Guggenheim Pond, Jones Beach, L. I., Oct. 6, at least 4 (Kessler and Kuerzi); 2, Brookhaven, L. I., Dec. 15 (C. K. Nichols and Walsh).

Mareca americana. Baldpate.—3, Kensico, Feb. 2 and 3 (Kassoy, Herbert, J. and R. Kuerzi); Shinnecock Bay, L. I., Feb. 16 (Wilcox); Mastic, L. I., May 11 (J. T. Nichols); 5, Troy Meadows, Sept. 15 (Walsh); 250, Guggenheim Pond, Jones Beach, L. I., Oct. 6 (Kessler and Kuerzi).

Nettion carolinense. Green-winged Teal.—19, Troy Meadows, N. J., Sept. 15 (Walsh); Tod's Neck, Conn., Dec. 22, 1929 to Jan. 11, 1930 (Peterson, Kassoy, Herbert, Kuerzi, etc.).

Querquedula discors. Blue-winged Teal.—Montrose, N. Y., Feb. 23 (Thurston); 20, Troy Meadows, April 21 (Urner); a few to May 30, may breed (Urner, Edwards, Walsh, etc.); 2, Easthampton, L. I., July 31 (Helmuth).

Spatula clypeata. Shoveller.—3, Overpeck Creek, N. J., March 29 (Janvrin); 6, Caldwell, N. J., March 31 (Peterson); Dutchess County, April 21 (Crosby); Newark Marshes, N. J., Aug. 26 (Clausen); 2, Troy Meadows, Sept. 7 (Walsh); Mastic, L. I., Sept. 15 (J. T. Nichols); 2, Guggenheim Pond, Jones Beach, L. I., Oct. 6 (Kessler and Kuerzi); Bronx Region, N. Y., Dec. 22 (Bronx County Bird Club).

Dafila acuta. Pintail.—Dutchess County, Jan. 6 (Crosby); Bronx Region, N. Y., Jan. 6 (Bronx County Bird Club); Shinnecock Bay, L. I., Feb. 16 (Wilcox); Easthampton, L. I., July 19 to 31, maximum of 3 (Helmuth).

Aix sponsa. Wood Duck.—Van Cortlandt Park, Jan. 28 (Cruickshank).

Marila valisineria. Canvasback.—500, Bronx Region, Feb. 3 (Cruickshank); equally abundant at Croton Point, during early March (Kuerzi, etc.); 2, Speonk, L. I., May 1 (Wilcox); 3, Shinnecock, L. I., Aug. 2, and Montauk, L. I., Aug. 9 (Helmuth); Speonk, L. I., Oct. 28 (Wilcox).

Marila marila. Scaup.—Flock of 27, Georgica Pond, Easthampton, L. I., July 24 (Helmuth); 6, Mastic, L. I., Sept. 6 (J. T. Nichols); 2, Central Park, Nov. 28, 29 (Rogers).

Marila collaris. Ring-necked Duck.—2, Croton Point, N. Y., Jan. 27 (Herbert, Kassoy and Kuerzi); 8, Kensico, Mar. 31 (Kuerzi); East Moriches, L. I., Oct. 22 (Wilcox); 3, Montauk, L. I., Nov. 5 (Wilcox, Kassoy, J. and R. Kuerzi); Brookhaven, L. I., Dec. 15 (C. K. Nichols and Walsh).

Clangula clangula americana. Goldeneye.—17, Central Park, N. Y., Nov. 28 and 29 (Rogers).

Charitonetta albeola. Bufflehead.—Regularly abundant on Barnegat Bay, N. J., in winter (Urner, etc.); 18, Bronx Region, Feb. 3 (Cruickshank); Dutchess County, April 21 (Crosby); Bronx Region, May 5 (Bronx County Bird Club); 65, Three Mile Harbor, L. I., Dec. 21 (Helmuth).

Histrionicus histrionicus. Harlequin Duck.—Pair on Long Island Sound near Orient, L. I., Nov. 17 (Latham).

Somateria spectabilis. King Eider.—Beach Haven, N. J., March 3 (Jaques); Pelham, Bronx Region, Dec. 20 (R. Kuerzi); Hudson at Riverdale, in the same place as last year, Dec. 22, etc. (Bronx County Bird Club).

Erismatura jamaicensis. Ruddy Duck.—Pair, Georgica Pond, Easthampton, L. I., July 27 (Helmuth); Mastic, northwest corner of bay, Sept. 7 and 8 (J. T. Nichols); Troy Meadows, N. J., Sept. 22 (Walsh); 85, Southampton, L. I., Oct. 23 (Wilcox); 265, Montauk to Southampton, Nov. 5 (Kassoy, Wilcox, J. and R. Kuerzi); 343, Southampton, L. I., Nov. 23 (Wilcox); 26, same locality, Jan. 12 1930 (Wilcox); Central Park, Nov. 28, 29 (Rogers).

Chen hyperboreus nivalis (?). Snow Goose, probably Greater.—Hudson River, near Riverdale, March 9 (Cruickshank); Sayville, L. I., Nov. 7 (Dr. G. M. Phelps).

Olor columbianus. Whistling Swan.—Between Quogue and Southampton, L. I., April 6, five birds with Canada Geese and Mute Swans (J. and R. Kuerzi).

Botaurus lentiginosus. American Bittern.—Croton Point, N. Y., March 31 (Kuerzi); Hanover Neck Marsh, N. J., April 3 (Quattlebaum).

Ixobrychus exilis. Least Bittern.—Troy Meadows, N. J., April 21 (Urner).

Herodias egretta. American Egret.—20, North Caldwell, N. J., July 6 (reported to Newark Museum); Cross River, Westchester, July 20 (R. Kuerzi); Montauk to Easthampton, L. I., July 25 to Sept. 28 (Helmuth); 25, Troy Meadows, N. J., Aug. 7 (Urner, etc.); 10, Little Beach, N. J., Aug. 17 (Walsh); 1, Lake Siskowit, Westchester County, Aug. 22 to 28 (Janvrin).

Hydranassa tricolor ruficollis. Louisiana Heron.—Georgica Pond, Easthampton, L. I., Aug. 9 and 10 (Helmuth). See *Auk*, Vol. XLVII, No. 4, p. 528, etc.

Florida cærulea. Little Blue Heron.—East end of Long Island, July 26 to Sept. 24; maximum of 41 (Helmuth); Mr. Urner has the following memoranda for the New Jersey coast region: 250, Barnegat Region, Aug. 6; 100, Troy Meadows, N. J., Aug. 7; 25, Brigantine, N. J., Aug. 10; 65, Matedeconk, N. J., Aug. 11; 5, Lake Siskowit, Westchester, Aug. 22 to 26 (Janvrin); Silver Lake, Westchester, Aug. 31 (E. G. Nichols).

Egretta candidissima. Snowy Egret.—1, Troy Meadows, N. J., Aug. 5, and 2, Aug. 7 (Walsh); same locality, Aug. 8 (Clausen and others); same locality, 2, Aug. 7, and 1, Aug. 25 (Urner); Little Beach, N. J., Aug. 17 (Walsh).

Nycticorax nycticorax nævius. Black-crowned Night Heron.—Over five hundred birds in the Colony at Speonk, L. I., March 28 (Wilcox).

Nyctanassa violacea. Yellow-crowned Night Heron.—Brigantine, N. J., May 26 (Johnson and Walsh); 9, Barnegat Region, N. J., Aug. 11 (Urner, etc.); Bridgehampton, L. I., Sept. 2 and 13 (Helmuth); Manorville, L. I., Sept. 15, adult; Orient, L. I., Sept. 21, immature (both by Latham).

Rallus elegans. King Rail.—Croton Point, N. Y., Mar. 31 (Kuerzi); Blue Point, L. I., April 7 (M. A. Nichols); Troy Meadows, N. J., April 21 (Urner); Titicus Lake, Westchester County, Aug. 18 (Baker); Orient, L. I., Dec. 10, caught in muskrat trap (Latham).

Rallus virginianus. Virginia Rail.—Mastic, L. I., Jan. 12 (W. F. Nichols); Bronx Region, N. Y., Jan. 12 (Cruikshank).

Porzana carolina. Sora.—Van Cortlandt Park, Apr. 7 (Cruikshank); Mastic, L. I., Aug. 10 (J. T. Nichols).

Coturnicaps noveboracensis. Yellow Rail.—Mecox Bay, Sept. 2 (Helmuth), *Auk*, Vol. XLVII, No. 4, p. 531. Captured Islip, L. I., Feb. 22 (Rob. Richie).

Gallinula galeata. Florida Gallinule.—Bred at Speonk, L. I., this summer, noted there as late as Oct. 23 (Wilcox); also at Calverton, near Riverhead, L. I. (Baasch); "Steadily commoner on eastern Long Island where formerly it was rare"; height of fall migration, Oct. 10, 23 birds observed (Helmuth). *Auk*, Vol. XLVII, No. 4, p. 528, etc.

Fulica americana. American Coot.—Tod's Neck, Conn., Jan. 24 (J. and R. Kuerzi); Speonk, L. I., Feb. 2 and May 13 (Wilcox); Harmon, N. Y., March 17 (Thurston); Bronx Region, March 23 (Kuerzi); Mastic, L. I., Mar. 26 (W. F. and J. T. Nichols); Troy Meadows, N. J., Sept. 22 (Walsh).

Lobipes lobatus. Northern Phalarope.—30, Lake Hopatcong, N. J., Aug. 14 (Pierce Godley); Newark Bay, N. J., Aug. 25 (Herbert).

Steganopus tricolor. Wilson's Phalarope.—Shinnecock Bay, L. I., Sept. 14 and 15 (Helmuth). See *Auk*, Vol. XLVII, No. 4, p. 528, etc.

Philohela minor. Woodcock.—Heard calling at Manasquan, N. J., Feb. 9, earliest (Kuerzi).

Macrorhamphus griseus griseus. Dowitcher.—Over 500, Brigantine, N. J., July 14 (Urner and Kuerzi).

Micropalama himantopus. Stilt Sandpiper.—Shinnecock Bay, L. I., Oct. 16 (Helmuth).

Tringa canutus. Knot.—3, Barnegat, N. J., Jan. 13 (Urner, etc.); Mecox Bay, L. I., Dec. 21 (Helmuth).

Pisobia fuscicollis. White-rumped Sandpiper.—Bronx Region, May 5 (Herbert, Kassoy and Kuerzi); Dyker Heights, Aug. 18 and 22 (Hix); over 400, Newark Marshes, N. J., Oct. 6 (Edwards, Eaton and Urner).

Pisobia bairdi. Baird's Sandpiper.—Seven sight records from Aug. 4 to Sept. 15, on the east end of Long Island (Helmuth). See *Auk*, Vol. XLVII, No. 4, p. 531.

Pelidna alpina sakhalina. Red-backed Sandpiper.—100, Barnegat, N. J., Jan. 13 (Urner, etc.); 150, same locality, Jan. 12, 1930 (Kuerzi, Urner, etc.).

Ereunetes pusillus. Semipalmated Sandpiper.—2, Barnegat, N. J., Jan. 13 (Urner, etc.); Long Beach, L. I., Apr. 27 (Janvrin).

Calidris leucophæa. Sanderling.—25, Barnegat, N. J., Region, Jan. 13 (Urner, etc.); Southampton, L. I., Jan. 20 (Peterson, Kassoy, J. and R. Kuerzi).

Limosa fedoa. Marbled Godwit.—Northport, L. I., Sept. 9 to 12 (Miss Mary Ingraham).

Limosa hæmastica. Hudsonian Godwit.—Shinnecock Bay, L. I., Oct. 16 (Helmuth). See *Auk*, Vol. XLVII, No. 4, p. 531.

Totanus flavipes. Yellow-legs.—Early flight, Newark Marshes, N. J., July 31, over 300 birds present; 600 on Sept. 18 (Urner, etc.); Mecox Bay, L. I., Oct. 18 (Helmuth).

Helodromas solitarius. Solitary Sandpiper.—Bronx Region, April 7, 14 and 21 (Black); Delawanna, N. J., Apr. 13 and 14 (Clausen and Edwards).

Catoptrophorus semipalmatus. Willet.—Dyker Heights, Aug. 11 (Hix).

Bartramia longicauda. Upland Plover.—2, Newton, N. J., May 13 (Mrs. Hegeman); bred at Lamington, Somerset County, N. J. (Miss Kuser); calling, Newark Marshes, May 14 (Nelson); same locality, June 30, 4 birds, 1 singing (Edwards and Urner); Orange County, N. Y., June 9, as follows: Washington-

ville, 1 pair; Goshen, 1 pair; Middletown, 1 pair (Kassoy, J. and R. Kuerzi); Oakwood Beach, S. I., Aug. 10 (Hix).

Actitis macularia. Spotted Sandpiper.—Milltown, N. J., Oct. 11 (Collins).

Numenius americanus. Long-billed Curlew.—Watermill, Mecox Bay, L. I., Sept. 2 and 7 (Helmuth). See *Auk*, Vol. XLVII, No. 4, p. 528, etc.

Numenius hudsonicus. Curlew.—Oakwood Beach, S. I., May 25 (Brody); abundant along the New Jersey coast, chiefly in July; maximum one day—940, July 23 (Urner, etc.); present in numbers on Long Island later than usual; last recorded at Jones Beach, L. I., Oct. 6 (Kessler and Kuerzi).

Squatarola squatarola. Black-bellied Plover.—4, Barnegat, N. J., Jan. 13 (Urner, etc.); Great Pond, Montauk, L. I., Jan. 20 (Peterson, Kassoy, J. and R. Kuerzi); 3, Mecox to Montauk, L. I., July 2 to 4 (Helmuth).

Charadrius dominicus. Golden Plover.—30, Newark Marshes, N. J., Oct. 6 (Eaton, Edwards and Urner); 9, Jones Beach, L. I., Oct. 6 (Kessler and Kuerzi); 1, Southampton, L. I., Nov. 5 (Wilcox, Kassoy, J. and R. Kuerzi, etc.); 15, Watermill, L. I., Nov. 9 (Wilcox).

Aegialitis semipalmata. Ringneck.—Montauk, L. I., July 2 (Helmuth); same locality, Dec. 9 (Wilcox).

Arenaria interpres morinella. Ruddy Turnstone.—Barnegat, N. J., Region, Jan. 13 (Urner, etc.); 3, Montauk, L. I., July 31 (Helmuth).

Melopelia asiatica asiatica. White-winged Dove.—Specimen collected, Watermill, L. I., Nov. 14, new to the state (Wilcox).

Cathartes aura septentrionalis. Turkey Vulture.—Troy Hills, N. J., Mar. 13 (Quattlebaum); Upper Montclair, N. J., April 2 (Eaton).

Falco columbarius. Pigeon Hawk.—Montauk, L. I., Jan. 4, 1930 (Johnson and Walsh).

Pandion haliaetus carolinensis. Osprey.—Van Cortlandt Park, March 16 (Breslau); Speonk, L. I., March 1 (Wilcox); 5, Mastic, L. I., March 26 (J. T. Nichols).

Aluco pratincola. Barn Owl.—Nest at Bayport, L. I., in a windmill tower where they also nested last year, with three nearly full grown young, last week in August (Wilcox); Croton Point, March 24 (Peterson, Herbert, Kassoy and Kuerzi); Mr. Urner reports an apparent migration of this species in the Barnegat Region, N. J. Usually considered rare in that area, numbers of the birds were taken in traps set for hawks at the State Game Farm, Forked River, N. J., in the fall, seeming to indicate a flight of the species, perhaps north or south at that time.

Asio wilsonianus. Long-eared Owl.—Forked River, Jan. 12, 1930, new to region (Urner, Edwards and Walsh).

Cryptoglaux acadia. Saw-whet Owl.—In the evergreens about the American Museum entrance, Nov. 12 (numerous observers); Bronx Region, Dec. 22, and through January (Bronx County Bird Club); Bronx Region, April 14 (R. C. Black).

Bubo virginianus. Great Horned Owl.—Bronx Region, Dec. 22, through February (Bronx County Bird Club). As many as 65 were reported to Mr. Urner as taken at the State Game Farm, Forked River, N. J., during February and March, illustrating the distance which individual birds of this species must travel and how great an area they would seem to hunt over, since the species cannot really be called common in the Barnegat Region.

Ceryle alcyon. Belted Kingfisher.—Lawrence, L. I., Feb. 22 (H. F. Stone).

Sphyrapicus varius. Yellow-bellied Sapsucker.—Montclair, N. J., Jan. 3 (Mrs. Hegeman); Bronx Region, Dec. 22 (Bronx County Bird Club).

Phlæotomus pileatus abieticola. Northern Pileated Woodpecker.—Springdale Swamp, N. J., June 15 (Edwards and Urner); east of Cold Spring, Putnam County, N. Y., June 16 and 23. etc. (Kuerzi).

Centurus carolinus. Red-bellied Woodpecker.—Easthampton, L. I., July 15; Montauk, L. I., Sept. 2 (Helmuth). See *Auk*, Vol. XLVII, No. 4, p. 532.

Archilochus colubris. Ruby-throated Hummingbird.—Milltown, N. J., Oct. 5 (Collins); Ward's Island, N. Y., Oct. 19 (Cromwell).

Tyrannus verticalis. Arkansas Kingbird.—Montauk Point, L. I., Oct. 4 (Helmuth). See *Auk*, Vol. XLVII, No. 4, p. 532.

Sayornis phæbe. Phæbe.—Blue Point, L. I., Jan. 6 (M. A. Nichols); Westbury, L. I., Dec. 13 (Matuszewski).

Otocoris alpestris praticola. Prairie Horned Lark.—12, Sparta, N. J., Feb. 24 (Eaton); Montauk, L. I., May 30, probably this subspecies (Wilcox); bred Lamington, Somerset County, N. J. (Miss Kuser).

Corvus corax principalis. Northern Raven.—3, Barnegat, N. J., Feb. 10 (Urner, Rogers, Kassoy and Kuerzi); 5, same locality, Nov. 10 (Urner, Edwards, Walsh, etc.).

Melothrus ater. Cowbird.—Garden City, L. I., Jan. 13 (J. T. Nichols); 50, Westhampton, L. I., Jan. 21 (Wilcox); 60, Bronx Region, N. Y., Dec. 22 (Bronx County Bird Club); flock of 200 through January, 1930, near Broadway and 246th St. (Chubb).

Agelaius phæniceus. Red-winged Blackbird.—7, Croton Point, Jan. 27 (Herbert, Kassoy, Peterson and Kuerzi); Speonk, L. I., Feb. 18 (Wilcox).

Icterus spurius. Orchard Oriole.—Bronx Region, April 28 (Kuerzi, etc.); Milltown, N. J., April 29 (Collins).

Euphagus carolinus. Rusty Blackbird.—Wintered at Passaic, N. J. (Clausen).

Quiscalus quiscula æneus (?). Grackle (Bronzed ?).—Flock of 400, Speonk, L. I., Jan. 11 (Wilcox).

Hesperiphona vespertina. Evening Grosbeak.—3, West Caldwell, N. J., Dec. 31 (Rusling); Bernardsville, N. J., Jan. 4, 1930 (Miss Kuser); 3, Dutchess County, Jan. 5, 1930 (Crosby).

Pinicola enucleator leucura. Pine Grosbeak.—Numerous records in all parts of the region, except Long Island, during late December, 1929, and January and February, 1930; the following are notable "high counts": 38, Cold Spring, N. Y., Dec. 26 (L. N. and E. G. Nichols); 40, Essex County Reservation, N. J., Dec. 26 (Urner).

Loxia curvirostra minor. American Crossbill.—Montrose, N. Y., Feb. 3 (Thurston); 15 to 20, Bronx Botanical Gardens, March 18 to 20 (J. and R. Kuerzi, etc.); 3, Tod's Neck, Conn., April 3 (Miss Brooks).

Loxia leucoptera. White-winged Crossbill.—10, Dutchess County, N. Y., Dec. 24 (Crosby).

Acanthis linaria linaria. Redpoll.—Generally distributed in Bronx Region and adjoining areas, Jan. 31 to Feb. 12; maximum number 75 (Bronx County Bird Club); 38, Montrose, N. Y., Feb. 3 (Thurston); 8, Montclair, N. J., Feb. 22 (Mrs. Hegeman); a few at Upper Montclair, N. J., Feb. 23 to March 13 (Eaton); large flock, Tod's Neck, Conn., March 9 (Miss Brooks); last recorded in Bronx Region, March 17 (Nelson, Peterson, Kassoy, Herbert and Kuerzi).

Carduelis carduelis. European Goldfinch.—Ward's Island, N. Y., Aug. 8 (Cromwell); University Heights, N. Y. C., Oct. 10 (Cruickshank).

Calcarius lapponicus. Lapland Longspur.—5, Barnegat, N. J., Region, Feb. 10, new to region (Urner, Walsh, Johnson, Rogers, Kassoy and Kuerzi); Elizabeth, N. J., Region, Dec. 22 (Carter and Urner).

Passerculus princeps. Ipswich Sparrow.—Bronx Region, Dec. 12 (R. Kuerzi).

Passerculus sandwichensis savanna. Savannah Sparrow.—Garden City, L. I., March 24; Mastic, L. I., March 27 (W. F. and J. T. Nichols).

Passerherbulus nelsoni nelsoni. Nelson's Sharp-tailed Sparrow.—Orient, L. I., Oct. 5 (Latham).

Passerherbulus caudacutus. Sharp-tailed Sparrow.—Bronx Region, Jan. 5 (Cruickshank).

Zonotrichia leucophrys. White-crowned Sparrow.—Bronx Region, Dec. 15 (R. Kuerzi).

Spizella monticola. Tree Sparrow.—Troy Meadows, N. J., May 5 (Clausen); Bernardsville, N. J., Oct. 4 (Miss Kuser); Roslyn, L. I., Oct. 8 (Mrs. Fry).

Spizella passerina. Chipping Sparrow.—Bronx Region, Jan. 19 (Cruickshank).

Junco hyemalis. Slate-colored Junco.—Hither Woods, Montauk, L. I., July 16 to 23 (Helmuth); Miller Place, L. I., Aug. 15 (G. P. Helme).

Passerella iliaca. Fox Sparrow.—Southwest of Riverhead, L. I., May 9 (Wilcox).

Pipilo erythrophthalmus. Towhee.—Bronx Park, Jan. 20 (Johnston); 2, Passaic, N. J., April 7 (Clausen); Montrose, N. Y., April 14 (Thurston).

Cardinalis cardinalis. Cardinal.—Present at Boonton, N. J., after an absence of three years (Carter); Bronx Region, Dec. 22, etc. (Bronx County Bird Club).

Spiza americana. Dickcissel.—Speonk, L. I., caught in banding trap, Oct. 16, collected (Wilcox).

Piranga rubra. Summer Tanager.—Male, Speonk, L. I., May 25 (Wilcox); Ward's Island, N. Y., Sept. 19 (Cromwell).

Hirundo erythrogastra. Barn Swallow.—Overpeck Creek, April 2 (Breslau); 2, Tod's Neck, Conn., Nov. 17 (Kassoy and Kuerzi).

Iridoprocne bicolor. Tree Swallow.—Troy Meadows, N. J., March 13 (Quattlebaum); 3, Bronx Region, March 24 (Nelson, Peterson, Herbert, Kassoy and Kuerzi); 3, Mastic, L. I., March 27 (J. T. Nichols).

Stelgidopteryx serripennis. Rough-winged Swallow.—Oyster Bay, L. I., June 26 and 27 (J. T. Nichols).

Lanius borealis. Northern Shrike.—Relatively abundant about New York this winter; numerous records from all sections of the region.

Lanius ludovicianus migrans. Migrant Shrike.—Montauk, L. I., April 6 (J. and R. Kuerzi).

Lanivireo solitarius. Solitary Vireo.—2, Riverdale, N. J., April 14 (Eliot and Janvrin); breeding in two localities east of Cold Spring, Putnam County; noted there in song on June 16, 23 and 30 (Kuerzi).

Vireo griseus. White-eyed Vireo.—Easthampton, L. I., Oct. 17 (Helmuth).

Protonotaria citrea. Prothonotary Warbler.—Bronx Park, May 12 to 14 (numerous observers).

Helmintheros vermivorus. Worm-eating Warbler.—Bronx Region, April 28 (Herbert, Peterson, Kassoy and Kuerzi).

Vermivora chrysoptera. Golden-winged Warbler.—Baldwin, L. I., May 7 (Raven); Speonk, L. I., May 8 (Wilcox).

Vermivora rubricapilla. Nashville Warbler.—Noted in at least two localities east of Cold Spring, Putnam County, N. Y., June 23, etc. (Kuerzi); casual near Easthampton, L. I., July 31 (Helmuth).

Dendroica caerulescens. Black-throated Blue Warbler.—Common summer resident in the higher swamps between Cold Spring and Carmel, Putnam County, N. Y. (Kuerzi, etc.).

Dendroica fusca. Blackburnian Warbler.—Singing male in hemlock swamp east of Cold Spring, Putnam County, N. Y., June 2, 16 and 30, probably bred (Kuerzi, etc.).

Dendroica vigorsi. Pine Warbler.—Mastic, L. I., Mar. 26 (J. T. Nichols); Tod's Neck, Conn., April 3 (Miss Brooks); Easthampton, L. I., Dec. 21 (Helmuth).

Dendroica palmarum hypochrysea. Yellow Palm Warbler.—Bronx Region, Mar. 24 (Bronx County Bird Club); Tod's Neck, Conn., April 3 (Miss Brooks); Hanover Neck Marsh, N. J., April 4 (Quattlebaum); over 200, Central Park, April 21 (Watson, etc.).

Dendroica discolor. Prairie Warbler.—Garden City, L. I., Sept. 2 (J. T. Nichols); Speonk, L. I., Oct. 21 (Wilcox).

Seiurus noveboracensis noveboracensis. Water Thrush.—Springdale Swamp, N. J., June 15, probably breeds (Edwards and Urner); feeding young, east of Cold Spring, Putnam County, N. Y., June 30 (Kuerzi).

Oporornis agilis. Connecticut Warbler.—Alwood Swamp, N. J., Aug. 25 (Clausen).

Oporornis philadelphia. Mourning Warbler.—Montauk, L. I., May 9 (Wilcox); Bronx Region, May 19 (Bronx County Bird Club); Mount Kisco, N. Y., May 25 (Baker); Milltown, N. J., June 1 (Collins); Passaic, N. J., Aug. 20 (Clausen).

Wilsonia citrina. Hooded Warbler.—Boonton, N. J., April 28 (Urner); Bronx Region, April 28 (Peterson, Kuerzi, Kassoy and Herbert).

Wilsonia pusilla. Wilson's Warbler.—Speonk, L. I., May 7 (Wilcox).

Wilsonia canadensis. Canadian Warbler.—Breeds commonly in higher swamps

between Cold Spring and Carmel, Putnam County, N. Y. (Kuerzi, etc.); noted June 23, 30, etc.

Setophaga ruticilla. Redstart.—Milltown, N. J., April 25 (Collins); 7, Southfields, N. Y., April 28 (Watson); several in the Bronx Region, April 28 (numerous observers).

Anthus rubescens. Pipit.—Tod's Neck, Conn., Jan. 26 and 27 (Bronx County Bird Club); Bronx Region, Dec. 22 (same observers).

Mimus polyglottos. Mockingbird.—Ward's Island, N. Y., April 8 to 16 (Cromwell); Passaic, N. J., April 29 into summer (Clausen, etc.); Speonk, L. I., May 18 (Wilcox); Montauk, L. I., July 15, perhaps bred (Helmuth); East Moriches, L. I., Oct. 7 (Wilcox); Montauk, L. I., Nov. 5 (Wilcox, Kassoy, J. and R. Kuerzi); East Moriches, L. I., same date (same observers); same locality, Nov. 27 (Wilcox).

Dumetella carolinensis. Catbird.—Hastings-on-Hudson, N. Y., Dec. 23 (Vogt); into January at Ridgewood, N. J. (N. J. Audubon Society).

Toxostoma rufum. Brown Thrasher.—Speonk, L. I., April 2 (Wilcox); Upper Montclair, N. J., April 9 (Eaton); Bronx Region, N. Y., Dec. 22 (Bronx County Bird Club).

Nannus hiemalis. Winter Wren.—Noted in summer in southwestern Putnam County (Hickey).

Cistothorus stellaris. Short-billed Marsh Wren.—Croton Point, N. Y., April 28 (Peterson, Kassoy, Herbert and Kuerzi).

Telmatodytes palustris. Long-billed Marsh Wren.—Several at Croton Point, N. Y., Jan. 11 (Peterson, Kuerzi, Herbert and Kassoy); 4, Blue Point, L. I., April 7 (M. A. Nichols).

Certhia familiaris americana. Brown Creeper.—Several bred east of Cold Spring, Putnam County, N. Y. (Kuerzi).

Sitta canadensis. Red-breasted Nuthatch.—Montclair, N. J., Jan. 3 to 25 (Mrs. Hegeman); wintered in Bronx Region (numerous observers); Garden City, L. I., March 17, apparently did not winter (J. T. Nichols); casual in Dutchess County, July 16 (Crosby); evidence of flight at Mastic, L. I., Sept. 12 (J. T. Nichols).

Bæolophus bicolor. Tufted Titmouse.—Fairly common resident, breeding, in Rockland County, N. Y. (J. Rintoul Bardonia); Dutchess County, November (Crosby); Bronx Region, Dec. 22 (Bronx County Bird Club).

Penthestes hudsonicus nigricans (?). Brown-capped Chickadee, probably Labrador.—Ridgewood, N. J., Jan. 25 (Mrs. H. E. Ahern).

Regulus satrapa. Golden-crowned Kinglet.—Casual in Dutchess County, N. Y., July 16 (Crosby).

Poliophtila cærulea. Blue-gray Gnatcatcher.—Dyker Heights, several, April 3 (Breslau); Speonk, L. I., April 21 (Wilcox).

Hylocichla fuscescens. Veery.—Bred at Plandome and Roslyn, L. I. (Mrs. Fry).

Hylocichla alicia alicia. Gray-cheeked Thrush.—Passaic, N. J., May 4 (Clausen).

Hylocichla guttata pallasii. Hermit Thrush.—Putnam County, N. Y., probably bred; heard and seen there in early July (Kuerzi).

Notes on the Breeding Birds of Putnam County, New York

BY JOHN F. KUEZZI

As an outgrowth of a plan of the Linnæan Society to study the breeding birds of the less known areas of the New York City region, a comprehensive survey of the nesting bird population of Putnam County, New York—which had been for years virtually unknown—was undertaken early in June, 1928, extended over the month and was concluded late in June, 1929. About ten observers, mostly members of the Linnæan Society of New York and Bronx County Bird Club, participated. It is hoped that the results which are here briefly summarized will prove interesting and of value by comparison with data obtained in Westchester and Dutchess Counties, immediately adjoining on the south and north respectively, both of which had been previously studied in the breeding season.

On June 10, 1928, a preliminary canvass was made of the country in the western half or two-thirds of Putnam County, from Oscawana Lake to Cold Spring and Carmel. Between the latter two localities, is situated and was discovered some of the most attractive environment for northern or Canadian species. Here, there are several swamps at an elevation of 1,000 feet or more with a decidedly northern aspect—some excellent stands of hemlock and extensive tracts of rhododendron and laurel. It was in this section of the County that the bulk of the Canadian species was found, both in 1928 and 1929. Part of one day, in both years, was spent in going over Mt. Taurus (or Bull Mountain as it was formerly known), immediately north of Cold Spring, on the summit of which Mr. John Ingle, Jr., of Bronxville, New York, had observed Juncos during the summer of 1927. Evidently the birds had not returned; at any rate, a careful scrutiny of the immediate vicinity failed to disclose any evidence of the presence of the birds. Several subsequent trips were made in the latter part of June, 1928, and in 1929 at approximately the same season, to the eastern portion of the County, north and east of Brewster, i.e., Peach Lake, Haviland Hollow, etc. Here on June 24, 1928, Messrs. Eaton, Coolidge and Curry made the remarkable discovery of a singing Winter Wren, in a hemlock swamp directly north of Peach Lake which is located in the lower, eastern part of the County. The bird was still

present and in full song, a week later (Kuerzi). Again, in June, 1929, Mr. Joseph Hickey observed a bird of the same species, in Putnam Valley, near Peekskill, in the lower, west end of the County, which may or may not have been breeding. It seems reasonable to assume that the first mentioned instance constitutes a genuine breeding record and that the species should thus occur, at a comparatively low elevation, is particularly noteworthy, since there is apparently no recorded breeding instance of the Winter Wren, in the New York area, even in the much higher portions of northern and north-western New Jersey.

The presence in the breeding season of certain other species usually classed as more or less distinctively Canadian, is interesting and significant. A Solitary Vireo was observed in song throughout June and into early July, 1929, in one of the higher swamps east of Cold Spring, in which it undoubtedly bred; two birds were occasionally seen but, unfortunately, the nest was not found nor were the young birds seen (Kuerzi and others). Nashville Warbler was observed in song in a second-growth birch grove near Clear Lake on June 10, 1928 (Coolidge, Kassoy, Kuerzi), and singing, in at least two different localities, in this general vicinity, in late June, 1929 (Kuerzi). Black-throated Blue and Canadian Warblers breed commonly in the higher swamps east of Cold Spring and west of Carmel (Kessler, Kassoy, Herbert, Coolidge, J. & R. Kuerzi), and in this same general locality, a Northern Water-thrush was observed in song on June 10 and 30, 1928 (Kessler, Kassoy, J. and R. Kuerzi), and feeding young on June 23, 1929 (Kuerzi). At least 8 were singing freely on June 16, 1931. A singing Blackburnian Warbler was observed in a hemlock grove at a low elevation, south of Cold Spring, June 10, 1928 (R. Kuerzi, Kassoy), perhaps a late migrant, though a pair of birds were present in a hemlock swamp at an elevation of about 1,100 feet, east of Cold Spring throughout June, 1929 (Herbert, Kassoy, Kuerzi), undoubtedly indicating a breeding pair. On June 30, 1928, a singing Brown Creeper was found in a portion of one of the higher swamps near Carmel (J. and R. Kuerzi), which had not been thoroughly covered on June 10, and at least two singing birds were present nearby throughout June, 1929, undoubtedly breeding birds (Kuerzi). In this vicinity the fresh workings of a Pileated Woodpecker were encountered on July 1, 1928, and the notes of the

birds were distinctly heard (Kuerzi and others). Late in June, 1929, the birds were again heard and a thorough search resulted in a momentary view of one of them (Kuerzi). A Hermit Thrush was heard in full song, between Carmel and Cold Spring, on the afternoon of July 8, 1929 (Kuerzi).

Despite the presence of this characteristically Canadian element, there is at least an observable trace of the Carolinian zone in Putnam County, as evidenced by the presence of a number of more or less distinctive species. King Rail has been observed in May in the swamp at Cold Spring (Ingle) where it may possibly breed. Turkey Vultures occur in the breeding season, at various points in the county, and are decidedly more numerous than in Westchester County; a maximum of six birds was observed on June 10, 1928, near Cold Spring. An Acadian Flycatcher was noted in song near Oscawana Lake, June 10, 1928. The Fish Crow is found sparingly near Cold Spring and perhaps elsewhere in the County. Two Rough-winged Swallows were seen just west of Cold Spring, June 10, 1928, perhaps indicating a breeding pair. About eight Worm-eating Warblers and two White-eyed Vireos were noted at scattered points in the County, on the same and subsequent dates. The Blue-winged Warbler evidently occurs relatively sparingly, chiefly in the lowlands of the County, and in most sections is practically replaced by the Golden-winged Warbler—obviously an exact reversal of conditions prevailing in Westchester County immediately to the south where the Blue-winged Warbler predominates and the Golden-winged variety is rare and local and apparently confined in the breeding season chiefly to the northern and north-western portion of that county, in the vicinity of Peekskill. Two singing Prairie Warblers were observed on June 23, 1928; one near Carmel and the other north of Brewster; in 1929 and 1930, there were no less than six pairs in the latter locality. Four singing Louisiana Water-thrushes were noted on June 10, 1928, and on the same day and on several successive dates, a Kentucky Warbler was observed in full song, near Oscawana Lake, doubtless a genuine breeder and, if so, evidently representing a considerable extension of the known breeding-range of the species in the New York Region, east of the Hudson. Hooded Warblers are generally distributed throughout in suitable woodlands though, for the most part, less numerous than in Westchester County. Two Carolina Wrens were observed near Oscawana, June 10, 1928.

A number of other species recorded seem worthy of note, such as: Pied-billed Grebe, 1 (Cold Spring swamp); Least Bittern, 1 (same locality); Woodcock, apparently well distributed throughout; Bob-white, 6; Ruffed Grouse, locally quite common; Broad-winged and Duck Hawks and Bald Eagle; Whip-poor-will, 8 (heard chiefly about Oscawana Lake before daylight on June 10, 1928); Alder Flycatcher, 3; Purple Finch, 2; Grasshopper Sparrow, 8; Henslow's Sparrow, 4; Cliff Swallow, 10; Parula Warbler, 1; Black-throated Green Warbler, 15; Short-billed Marsh Wren, 3, Cold Spring; and locally near Brewster.

In general, the observations summarized above tend to indicate the presence of decidedly more Canadian species in the breeding season in Putnam than in Westchester County, though probably less than in Dutchess County. Those species which are of Carolinian association, as is to be expected, are less predominant in Putnam County than in Westchester. Birds generally seem to be present in greater numerical strength in the latter locality than in the former, perhaps for ecological reasons. The total combined breeding-bird list for Putnam County, based upon the observations of 1928 and 1929 is 117 species. And while this list is probably not complete in every detail it is thought that it may tend to indicate the general character of the nesting bird life and the relative proportions of Canadian and Carolinian elements; also that it may serve as a working basis until such time as supplementary data are obtained.

Gardiner's Island Spring Bird Records, 1794-7

Presented by L. NELSON NICHOLS

The following notes of birds made by John Lion Gardiner, the seventh Proprietor of Gardiner's Island, were written by him in a note book that lately came into the possession of Mr. Milton Pennypacker of Long Island. Mr. Pennypacker is an ardent collector of Long Island material and saw the importance of the manuscript notes written during the 1790's on Gardiner's Island. The New York Public Library Manuscript Division was presented with a photostat copy of this note book, from which the following from two pages of the manuscript has been presented to the Linnæan Society for publication, through the kindness of Mr. V. H. Paltsits, chief of the Manuscript Division.

OBSERVATIONS OF BIRDS, ETC.—1794

- March 3. Saw a black bird.
- March 4. Saw numbers of them.
- March 9. Robbins come. And a small garden singing bird.
- March 10. Meadow larks begin to sing.

Eagles, crows, owls or rather a kind of mouse hawk, red headed & spotted wood peckers, a large white sea gull, wild Geese, black Ducks, & most other kind of Ducks except teal remain here during winter. I have observed that Fish hawks come on 21 of March & go on 21 of Spr. at the time of the Equinoxes; they are very regular in coming & going & seldom vary more than 48 hours. They wage war with the Eagle as soon as they come & numbers together overcome that large bird. I suppose they do this from Interest because the Eagle robs them of their fish & it is a happy circumstance for me for the Eagle lives altogether by plunder & he often will fix his claws into the back of a lamb & bare him away from its helpless mother. They are very destructive to lambs not being satisfied with less than one every Day. But as the Fish-hawks begin to fight them by the 21 of March they are generally gone by 8th April at the time of my lambs first come.

March 12. Blue birds & Kildees come.

March 20. Observed two fish hawks.

March 25. Beach birds on Plump point.

March 30. Saw a Martin.

April 4. Saw some Quà kers.

1795.—March 5th Dassies started. 10 Skunk-cabbage.

April 5. Black-birds, robbins, blue birds & kildees come.

1796.—March 1. Observed Robbin.

5 or 6 black birds have remained here two or three winters past. Observed to Day some red winged black-birds, the Red on Wing almost white. Feby. 5, 1797 found where an Eagle for hours had just eat the carcase of a crow.

See a Robbin Feby. 14th.

This ends the manuscript bird notes. The only item calling for explanation in the above notes is that of Quà kers on April 4, 1794. The unquestioned accent mark in the manuscript over the a of qua, leaves little doubt but that Mr. Gardiner was referring to the Night Heron or Qua-bird. In our time the Night Heron usually arrives at Orient April 6th (see Griscom), though there is a March 16th record by Roy Latham.

Gardiner's Island lies at the east end of Long Island. It had been purchased by Lion Gardiner who moved on to the island in the fall of 1639 with his family and a number of laborers thus constituting the first English settlement in New York. The writer of the above notes was born on the Island November 8, 1770, the son of David and Jerusha (Buell) Gardiner. John Lion had an only brother David born two years later. The father David died in 1774 leaving the Island to our author not yet four years of age. The mother married Isaac Conkling in 1778 but died in 1782, leaving another child Isaac Conkling. John Lyon Gardiner graduated at Princeton College in 1789 and returned to his Island where he continued to live until his death in 1816. The brother David Gardiner graduated the same year at Princeton with John Lion, but he studied law and then settled at Flushing where he was married in 1796. He therefore was not with John Lion Gardiner on the Island when the notes were written. The

half brother Isaac Conkling was also away in school studying to be a physician. As the grandparents were all dead and the living uncles and aunts living elsewhere, it looks as if our author had none of his family living with him when he wrote these notes on Gardiner's Island from the age of 23 to 25. He was not married until 1803, so that he had these winter and spring seasons to himself and the company of his servants. The remainder of the manuscript was on agricultural conditions, particularly horses. These two pages he seemed to have set aside for nature notes, but why he did not make late spring, summer and fall items we can only guess and regret.

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ABSTRACT
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Notes on the Summer Birds of Western
Litchfield County, Connecticut

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The picturesque, winding valley of the Housatonic is, in the neighborhood of Kent, Conn., less than a mile from the eastern boundary of Dutchess County, N. Y. The State line runs along the summit of Schaticoke Mountain, the western slope of which is New York, the eastern half Litchfield County, Conn. Delightful pastoral country borders the Housatonic and the towns are typically New England. The southern boundary of Litchfield County is near Gaylordsville, and the north line intercepts the Housatonic valley at Canaan. Running north from Gaylordsville, mountains rise first on the west (Schaticoke) and then on the east (Mohawk). The eastern highlands of Dutchess County, the Taconics, including Brace Mountain (Mt. Riga, popularly), extend over into the northwestern part of Litchfield County and west of the Housatonic reach their highest elevations in Connecticut (Bear Mountain, 2,360 feet). To the east of the River and up towards the Massachusetts line, Canaan Mountain rises to an altitude of 1,927 feet.

Though the southernmost part of Litchfield County is less than eighty miles from New York, it is seldom visited by New York birders, and perhaps for this reason was omitted from discussion by Griscom in his Handbook, "Birds of the New York City Region." The New York area as outlined by him runs only to the Connecticut line. More recently, however, a note appeared in Bird-Lore's New York "Season" (Sept.-Oct., 1932) with respect to the probable nesting of the Canada Warbler near Kent, Conn. Owing to the recent publication of "The Birds of Dutchess County" and with a view to the

furtherance of the Society's interest in the development of knowledge of the nesting birds of a larger New York area, not strictly as outlined by Griscom, it seems admissable to put on record some recent data on the summer birds of northwestern Litchfield County.

This northwestern fringe seems ornithologically the least known area of Connecticut—certainly it is far less known than the eastern sections of the State and appears to have been without a resident observer for many years. Little or nothing has been written about the summer bird-life of western Connecticut since the publication in 1913 of Sage and Bishop's "Birds of Connecticut." With respect to our area, that work largely reiterated the findings summarized in the earlier "Sport of Bird Study" by Herbert K. Job (1908). More recently Forbush restates the same data in "Birds of Massachusetts and other New England States."

Since 1930 we have been spending part or all of our summers at our place near Kent, Conn. Up to 1933, however, we had not been in Connecticut early enough in spring and summer to get completely satisfactory data on nesting birds. Anyone who, in the latitude of New York, has attempted a broad-scale census of breeding birds after the end—or even the third week—of June well knows the difficulties which beset him. We did, however, manage to get a fairly representative picture of the character of the summer bird population of Kent and its environs, and north to Cornwall and Falls Village. Our observations were then, and have since been confined to the Litchfield County portion of the Housatonic Valley—a perfectly convenient unit embracing the low-lands of the river valley and the mountains walling it in.* On June 17-18, 1933, with the interested cooperation of Dr. Ernst Mayr of the American Museum of Natural History, we made the first determined effort to investigate the higher, more remote sections north of Salisbury (Taconics, Bear Mountain, Mt. Gridley, Mt. Riga) and part of the time was spent on Canaan Mountain to the east, in the hope of finding Canadian species and birds of northern association.

The weather over that week-end was unseasonably cold and blowy, but by dint of some perseverance we managed to record all the Canadian species previously found in other years. Many new stations were found for species already known to summer, and the making of

*By coincidence, precisely the area covered by the official map, "The Appalachian Trail in Connecticut," No. 19 M.

a State breeding record was not without satisfaction. Our principal disappointment was in finding that the great fires of the early spring of 1930 had swept over the highest mountains of the northwest section of Litchfield—on which we had pinned our highest hopes—and burning along a wide front, had ruined practically everything in sight on the New York as well as the Connecticut side. Only a few isolated places—which were probably too wet to burn—remain in their original condition. The justly famous and lovely Sage's Ravine, centering about one of the most picturesque streams in the State, which rises on the Massachusetts side and roars and tumbles into Connecticut, now boasts merely a fringe of great trees. Although still as fascinating a place as ever to the sight-seer, its worth as a habitat for northern species may have been considerably impaired. The fires destroyed most of the timber at any distance from the brook and, in a few places, smoldered right down to the water's edge. It was here that the Winter Wrens were heard in full song, July 5 and 6, 1906 (H. K. Job).

There seemed little hope of finding rare northern birds on fire-swept mountains, though along the mountain road (1,700 to 1,800 feet) from Salisbury towards the Massachusetts line—in the burned area—Black-throated Blue, Canada, and Nashville Warblers had maintained themselves reasonably well. Chestnut-sided Warblers were everywhere. Here and there a few Hermit Thrushes were heard, but we had previously found them in equal or greater abundance near Cornwall, at much less elevation.

The only other oasis we could find in this desolate region was Bingham Pond—a little alpine mirror flanked to the north and south by tall black spruces, the ground deep in sphagnum. The elevation is about 1,800 feet. The Red Demon had not penetrated here so nearly to the water's edge and the spruce groves and deep sphagnum are still more or less intact. Here we made the agreeable discovery of the Golden-crowned Kinglet—a little group of four or five birds suggesting the possibility of a family. The birds were quite "noisy" for kinglets and were seen as well as could be desired both on the afternoon of the 17th and the morning of the 18th; two birds were still there July 18.* No mention of the summer occurrence of this species in Connecticut is made in Sage and Bishop, or by Forbush. A Magnolia Warbler was heard and seen on the northerly and westerly sides of the Lake, June 17. The nest of a Canada Warbler with five

*Young bird June 24, 1934, as listed.

eggs was found in a grassy hummock, June 18, on the south side of the pond (curiously only the second on record for the State!). Black-throated Blue Warblers were heard and seen, and a Hermit Thrush created such a din that the nest or young were seemingly near.

The Canaan Mountains to the east do not quite attain the altitude of the higher peaks of the Taconics but the fires have spared larger portions of them, and they may have further possibilities for northern species. A fine well-timbered brook drains Wangum Lake to the southwest. The lake—a reservoir for Norfolk, Conn.—is situated at about 1,500 feet, and about it and on the northeasterly face of the Mountain are wooded swamps.

The afternoon of June 18 was spent driving and on foot in this section though we could not help but feel that we were not doing the place full justice owing to the dull weather and strong winds which doubtless discouraged bird song. Nevertheless the song of a Blue-headed Vireo was plainly heard well up on the southwest side of the Mountain.

At about 5.30 in the morning of June 28, we again began the ascent of Canaan Mountain. As luck would have it, the weather was dull and foggy though it was warm and bird song seemed up to normal. Blackburnian Warblers were heard relatively low down in pine and hemlock woods. At around 700 to 800 feet the first Black-throated Blue and Canada Warblers were encountered. Next a Louisiana Water-Thrush and soon after a Blue-headed Vireo were heard in full song. Farther along (in fact probably far enough to obviate the possibility of a repeat) another vireo was heard in about the same locality in which one was recorded June 18. Black-throated Blue and Canada Warblers occurred at a fairly constant rate. At near 1,500 feet the mountain road gradually levels off and near Wangum Lake (Norfolk Reservoir) the country opens out. Stopping here and surrounded by what seemed in the mist large fields, we were amazed to hear several White-throated Sparrows in full song. Investigation revealed a perfectly made-to-order lay-out—swampy ground interspersed with scrubby alder and studded with comparatively small pines. At least three birds were singing close to us but with such low visibility it seemed a hopeless task to find any further evidence of their nesting. One bird was heard singing in the same locality July 18, 1933, and June 11, 1934, on brief stops in the evening.

Northern Water-thrushes were observed June 28, in two places—swampy woodland along the southeast side of Wangum Lake and in similar habitat some distance down the Norfolk side of Canaan Mountain. Hermit Thrushes were heard at regular intervals on both slopes of the Mountain. The notes of Pileated Woodpeckers were infrequently heard but their workings were everywhere to be seen.

One of the most productive sections for northern birds—and one which we perhaps best know—is along the State highway near Cornwall. This road though splendidly paved is strangely enough little used by motorists. Running south from Canaan Mountain one first encounters on the left a little pine-clad hillside where the Magnolia Warbler has been found several summers right through July. The habitat is so typical that one cannot seriously question that it nests with us.* The altitude—as in the New Jersey Water-Gap where the birds have been observed feeding young—is not great. Farther south is boggy woodland with a generous allotment of hemlock and laurel and well studded with dead trees. Canada and Black-throated Blue Warblers are of course regular summer residents, the altitude being around 1,000 feet. Here summer after summer one hears the charming contralto voice of the Blue-headed Vireo and the vigorous staccato song of the Northern Water-thrush. Pileated Woodpeckers seem oblivious of the near presence of road-burning man. Near here the State has set apart a little hemlock hillside for picnics. But still two Hermit Thrushes linger on and during a large part of the day add just the proper “atmosphere” though from a distance their voices are so “ethereal and unsubstantial” as probably seldom to be heard. Blackburnian Warblers also inhabit this little grove of hemlocks and farther south along the same road one hears their thin, lisping voices from almost every grove of pines. And this has been so at least since 1879 (Sage and Bishop). In fact they have become almost as much of an institution as the famous Cathedral Pines of Cornwall.

These great trees—though much publicized—are privately owned and carefully managed. Their situation is not high—perhaps 700 feet—but notwithstanding there are usually five to eight singing Blackburnian Warblers throughout June and July, and occasionally a Parula or two. Three Blue-headed Vireos were heard and seen, June 29, 1933, and a young bird was watched being fed. Here also we hear our only Pine Warbler in western Litchfield County.

*Observed feeding young July 6, 1934, in spruce bog near Cornwall.

The following is a purely arbitrary, briefly annotated list of birds, chiefly of northern or southern association. A few species are included whose presence in Litchfield County is or may be interesting or significant by comparison or contrast with nearby sections of the New York Region previously studied, or as enlarging the published material. To bring the list up to date we have inserted the 1934 data just prior to printing.

Turkey Vulture.—Occasional visitant, chiefly in May; has bred at Candlewood Lake, a few miles south of the Litchfield County line.

Southern (?) Bald Eagle.—Regularly seen near Kent, chiefly May, July and August; birds in adult and immature plumage. Nest annually observed for many years and as recently as 1933 near Kent, Conn. (Edwin Chase).

Eastern Ruffed Grouse.—Fairly common to common resident throughout.

Great Horned Owl.—A pair probably is resident on Schaticoke Mountain opposite our house but the birds are more often seen than heard except in early spring and late summer when often calling just before dusk.

Long-eared Owl.—Observed near Kent in August, 1932; the date is months earlier than the usual time for fall arrivals; heard repeatedly, August-September, 1933.

Eastern Whip-poor-will.—Abundant summer resident near Kent and probably throughout.

Northern Pileated Woodpecker.—“Rare winter and spring visitant, very rarely breeding” (Sage and Bishop); their recent increase doubtless parallels that of many sections of the New York Region. At present an uncommon resident: Cornwall Swamp; Canaan Mountain (several pairs); Salisbury section (several); Kent (two observations); recently abandoned nest, Cornwall, June 24, 1934 (Kirk Browning, Michael Oboiko, J. and R. K.).

Tree Swallow.—Local summer resident, several localities; pair nested on our place May 17-June 29, 1934.

Rough-winged Swallow.—“Housatonic Valley, north to Kent” (Job); this statement represents the present status of the species.

Northern Cliff Swallow.—Locally common summer resident; increasing.

Brown Creeper.—The presence of fairly extensive tracts of low wet woods with many dead trees suggests the possibility of the nesting of this species locally. So far it has not been discovered and more strangely still the species is unreported in summer from Connecticut though one was seen at Norwich (southeastern part of the State) in June a very few years ago, behaving as if feeding young (Dr. E. G. Howland; reported by S. Elliott, Jr.). In view of the fact that the birds occur irregularly in summer in Westchester, regularly in Putnam and Dutchess Counties, and have even been observed casually nesting in Van Cortlandt Park in New York City, they are of course expected to nest in Litchfield County.*

Eastern Hermit Thrush.—“Breeds regularly in northwestern part of State.” (Sage and Bishop). In comparison with Putnam County, N. Y., perhaps the most

*Several in a high, well-timbered swamp, Skiff Mountain, north of Kent, August 19, 1934 (M. Oboiko, J. and R. K.).

striking departure is the relative abundance of the Hermit Thrush as a breeding bird in Litchfield, even at moderate elevations. The species has been found but once in Putnam County in summer at a little under 1200 feet. An obvious explanation is that the hills of Litchfield are no great distance from the Berkshires, and it is not surprising to find this species ranging south into the Taconics and beyond. The Taconics in Putnam County are more or less isolated from any large center of supply of the birds. In Dutchess County, Hermit Thrushes breed in the eastern part towards the Litchfield County line. Their status in Litchfield County in summer may be thus summarized: Fairly common, usually but not invariably in conifers and seldom much below 1000 feet; Kent, Cornwall, Canaan, Salisbury, Norfolk, Mohawk Mountain, and to the east. Young birds, July 6, 1934, Mohawk State Forest; July 22, Bingham Pond (J. L. Edwards, J. and R. K.).

Golden-crowned Kinglet.—Sage and Bishop mention no records during the nesting season. Five, Bingham Pond, June 17 and 18, 1933 (Mayr, J. and R. K.); two birds still present in the same locality July 18; several, Bingham Pond, June 11, 1934; June 24, young bird found by Michael Oboiko and examined by Kirk Browning, J. and R. K. See also text above.

Blue-headed Vireo.—“Very rare summer resident” (Sage and Bishop). We have found it in tall pines and hemlocks near water and in wooded swamps with some hemlock. The following localities are not mentioned by Sage and Bishop: 3 singing, 1 young being fed, Cathedral Pines, Cornwall, 700 feet, June 29, 1933; 2 singing, Cornwall swamp, numerous dates, June and July 1931-1933; 2 singing, Canaan Mountain, June 28, 1933; Cream Hill and Dean's Ravine, July 6, 1934.

Worm-eating Warbler.—One pair, west bank of Housatonic, near Bull's Bridge.

Golden-winged Warbler.—“Rare summer resident in most of State, local in distribution” (Sage and Bishop); abundant on Spring migration, 1933 (R. K.), breeds relatively sparingly, both slopes of Housatonic Valley.

Blue-winged Warbler.—Four times in Litchfield County (Sage and Bishop), citing three localities two of them outside of our area; 2 pairs, Kent; 1 pair, South Kent; 1 pair, Macedonia (1933).

Nashville Warbler.—“Common in spring at Litchfield, one nest at Kent” (Sage and Bishop); fairly common summer resident, birch groves and brushy mountainsides, elevation seemingly unimportant; Macedonia, Cornwall, Salisbury section.

Northern Parula Warbler.—The status of this species is a repetition of its history near New York; formerly common where usnea moss occurred, the birds have decreased or disappeared apparently proportionately as the moss has become rare or unknown; West Cornwall (tall maples).

Magnolia Warbler.—Not known to summer (Sage and Bishop); nesting suspected (H. K. Job); spruce bog, Bingham Pond, June 18 (heard, Mayr, R. K.; seen, J. K.); pine groves on hillsides as follows: Cream Hill, about 1000 feet, June, July, 1933; North Cornwall, well under 1000 feet, through June and July, 1931, 1932; Cornwall Hollow, June 28, 1933; 3 pairs, Bingham Pond, June 11, 24, 1934; several feeding young, spruce bog, Mohawk State Forest, July 6.

Black-throated Blue Warbler.—Regular and usually fairly common around and above 700-800 feet, often hemlocks and usually kalmia; Cornwall Swamp; Canaan Mountain; Salisbury Section (Mt. Riga, Gridley and Bear Mountains); nest, Cornwall, May 17 to June 24, 1934.

Cerulean Warbler.—Recorded by M. S. Crosby at or near Winsted, presumably breeding. This locality is considerably to the *east* of our area, and when one considers that the birds are in all likelihood spreading east from Dutchess County, their presence in western Litchfield County is a fair possibility, though it should be remembered that in Dutchess County they are chiefly, if not entirely, *Hudson Valley* birds.

Blackburnian Warbler.—“A few spend the summer in pine groves of northern part of Litchfield County and doubtless breed there”; 1879, 1904, etc. (Sage and Bishop); chiefly pines and hemlocks in Cornwall Section as low as 700 feet; 5 pairs, Cathedral Pines, Cornwall; 1 pair, south of Cornwall Swamp; 2 pairs, road to West Cornwall; 1 at Cornwall Swamp; 2 or 3 singing, Canaan Mountain (As of 1933); 2 pairs, young, Dean's Ravine, July 6, 1934.

Northern Pine Warbler.—No summer records in Litchfield County (Sage and Bishop); 1 singing, Cathedral Pines, June 9, 1933, and July 22, 1934.

Prairie Warbler.—Only in southern part of State; common summer resident, less common farther north (Sage and Bishop); usually 2 or 3 pairs summer back of our place at Kent and this year (1933) the young birds were seen; 1 north of West Cornwall, June, 1932; also found at Candlewood Lake in June (Farley, J. K.) and in Dutchess County, N. Y., upper Harlem Valley, near Webatuck (Baker). In Westchester, Putnam and Litchfield, this species is found in summer, not in pines or cedars or even oak woods as one might expect but is entirely partial to brushy hillsides, particularly young birch or alder thickets, the association frequently being the Yellow-breasted Chat.

Northern Water-Thrush.—No mention of this species breeding or occurring in the State during the breeding season is made by Sage and Bishop (1913) nor more recently by Forbush. It is possible that this species has increased as a summer resident in the State. As in New Jersey and Putnam County, N. Y., it is found in wooded swamps around or above 1000 feet. We have found it in our area as follows: 2 pairs, Cornwall swamp, (1000 feet), late springs and summers of 1932 and 1933; no nest or young birds seen, but the birds sing regularly into July, and on June 28, 1933, betrayed the probable presence of young or nest by a marked display of nervousness on our approach; 3 singing, Wangum Lake, Canaan Mountain (about 1200 feet), same date; song, Cornwall, July 21, 1934 (J. L. Edwards, J. and R. K.).

Louisiana Water-Thrush.—“Rare in Litchfield County” (Sage and Bishop, citing only two place along the Housatonic Valley). We have found them along all mountain streams investigated at Kent, Macedonia, Canaan Mountain, and in Sage's Ravine, and consequently consider them at present little if any rarer here than in Westchester and Putnam Counties in New York.

Northern Yellow-throat.—Along the mountain road from Salisbury and up towards the Massachusetts line, on the morning of June 17, we were agreeably

surprised to hear what suggested to us the simple trill of a Junco though lacking a certain characteristic metallic quality. The elevation was around 1900 feet and an immediate check-up revealed that the bird was in Connecticut. Though the bird sang repeatedly, our efforts to locate it invariably resulted in finding a Yellow-throat. We gave it up little suspecting that we had arrived at a correct solution. Some hours later, we returned and after considerable stalking and sneaking around, Dr. Mayr calmly—all too calmly—announced that he had just had his glass on the bird as it sang and Oh, yes, our bird was a Yellow-throat. His pleasure was such that we felt he was an accomplice in some deep plot. The bird never varied from the sparrow-like trill. Such performances are perhaps to be expected from a bird which has been discovered wearing the mandibles of its bill occasionally crossed! ("Birds of Connecticut," Sage and Bishop).

Yellow-breasted Chat.—Sage and Bishop as of 1913 list it as found throughout the State though most abundant in south portion. We have found it in our section of the Housatonic Valley in several places, near Kent and North Kent. It is doubtless commoner to the east and south where the country is more generally favorable.

Hooded Warbler.—No record in our area (Sage and Bishop). This species is strangely absent from this section which is at first surprising in view of its relative abundance in Putnam County and its more than occasional occurrence in southern Dutchess County. Its presence in summer in our section while possible somehow seems unlikely.

Canada Warbler.—Sage and Bishop list the three principal areas of its nesting. We have found it fairly common around and above 600 to 700 feet in open to heavy woods and often though not necessarily associated with water; Kent, Macedonia, Cornwall swamp, both slopes of Canaan Mountain, Cream Hill, Salisbury section.

Orchard Oriole.—"Along the Housatonic to Gaylordsville" (Sage and Bishop). We have found it as far north as Falls Village (June 18, 1933, Mayr, J. and R. K.) about an hour's drive from Gaylordsville.

Eastern Purple Finch.—Fairly common summer resident chiefly but not entirely at higher elevations; brushy hillsides, second-growth open woods; Kent, Cornwall, Norfolk, Salisbury section.

Eastern Savannah Sparrow.—Tolerably common summer resident (Sage and Bishop); chiefly east of the Housatonic Valley but in damp meadows in the Valley near Cornwall and Falls Village.

Eastern Grasshopper Sparrow.—Fairly common summer resident.

Eastern Henslow's Sparrow.—Local summer resident; old abandoned fields growing to weeds and light brush.

Slate-colored Junco.—"Rare summer resident (Salisbury-Canaan)"—Forbush. On June 11, 1934, one was found on the summit of Bear Mountain (2355 ft.). The bird was perfectly quiet and no evidence of nesting was secured.

White-throated Sparrow.—Sage and Bishop cite without comment two late records (June 26 and July 8) east of the Valley, and June 18 at Salisbury. Near the summit of Canaan Mountain at an elevation of approximately 1500 feet, in a

perfectly characteristic habitat, 3 birds were in full song June 28, 1933. Owing to a wretched visibility no further evidence of nesting could be obtained then, but on subsequent visits to the place in the evenings of July 18, 1933 and June 11, 1934 at least one bird was still singing freely. From this evidence one feels justified in regarding the species as at least a potential breeder in our area.

There follows a list, gleaned from the record, of additional species which have bred or which have been suspected of breeding near our area—most of them to the east of the Housatonic Valley. All of the records are old but they are interesting as background and to show the untapped possibilities of our area. All notes are taken from Herbert K. Job's "Sport of Bird Study," 1908, Connecticut Edition and a few from Forbush.

Common Loon.—"Mr. Williams finds them . . . in Winchester and many years ago a pair bred there."

Hooded Merganser.—"Mr. Williams sees them occasionally and saw a female with young in Winchester about 15 years ago."

Eastern Goshawk.—"Nest at Winchester fifteen years ago—a unique record."

Upland Plover.—"Once quite common; now scarce; May, 1902, field in Torrington; Winchester, 1879". (Very rare summer resident in Massachusetts and Connecticut, Forbush).

Common Saw-whet Owl.—"Found occupying an old Crow's nest, Winsted, 12-15 years ago."

Yellow-bellied Sapsucker.—"Two nests Winchester region about 1893".

Prairie Horned Lark.—"Rather rare summer resident; pairs evidently nesting reported from Litchfield and Goshen; nest, four eggs, Torrington."

Red-breasted Nuthatch.—Winchester, June, 1876, nest with eggs, female shot; Norfolk, male, female and young, 1896."

Eastern Winter Wren.—"July 5 and 6, 1906, 2 pairs, males in full song, Sage's Ravine, within Connecticut boundary."

"Northern Loggerhead" (Migrant) Shrike.—"Fifteen years ago, nest near Winchester."

In listing the presence of these birds in the Winchester Region *well to the east* of the Housatonic Valley, Herbert K. Job, speaks of the country there as of "very high elevation and somewhat Canadian in fauna, flora and climate." We have driven over sections of this area and are of the impression that top altitudes are comparable with those in our region. Fires, however, have wrought havoc with the timber and probably reduced the present day chances of finding some of the northern species listed.

A brief discussion of the species enumerated above might be worth while or at any rate interesting. Loons are solitude loving birds, and in this day of real estate promoters few lakes—however inaccessible at first—are allowed to remain “undeveloped.” Some years ago the writers were satisfied that a pair of Loons bred on Croton Lake in Westchester County which is still relatively wild. It is possible that the species may turn up casually in summer on Norfolk Reservoir—undeveloped and with the added qualification of reasonable altitude.

Hooded Mergansers are not characteristically northern species and presumably are apt to nest anywhere in this latitude where conditions happen to be favorable. There seem to be no breeding records—old or recent—for the New York Region which, it may therefore be concluded, is unfavorable.

The breeding of the Goshawk, well authenticated, is an interesting casual occurrence which may not be repeated for many years. It would be interesting to know if its nesting followed a southward invasion of the species in the course of which it may have become “established” where it is said to have nested.

Upland Plovers seem to have increased to some extent in the east in recent years and they are consequently apt to become re-established in northwestern Connecticut. Their nesting in the broad open fields well east of our area (from Litchfield to Torrington) is more to be expected than in the Housatonic Valley though the latter is a possibility most agreeable to contemplate. So far there are no recent observations of these birds at any season in our area.

The Saw-whet Owl is a species which may well nest in the higher, more remote sections of the New York area. So far there is little definite data to go on, with the exception of an old Long Island record. While an exceedingly interesting species, it is unfortunately one not very apt to be found on a breeding-bird census.

Prairie Horned Larks have by all accounts not been found in the Housatonic Valley as breeders. Many years ago one stayed well into spring near Salisbury but presumably did not remain (H. K. Job). Their breeding to the east is consistent enough with the predominating type of country in their favor. We have had the species in mind on trips through our area for several years but have observed the birds but once—2, June 11, 1934, flushed from a plowed field north of Salisbury

near very favorable-looking country. If the birds occur at all as breeders, they are seemingly few.

The breeding of the Yellow-bellied Sapsucker in our area is to be expected but at the present time the chances are lessened by the destruction of much—if not most—of the timber. The nesting of a "Northern Loggerhead Shrike" near Winchester is interesting in view of the fact that at about the same period evidence of this species nesting near Ossining, N. Y., was obtained by Dr. A. K. Fisher. Red-breasted Nuthatches should turn up sooner or later in the spruce groves surrounding Bingham Pond. The only locality for Winter Wrens cited in the record is Sage's Ravine in our area but, unhappily, at present in a sadly depleted condition. We cherish the hope that on the days of our visits weather conditions were perhaps unfavorable for their singing though this hope dwindles as the number of our visits grows.

From our own experience in finding the Golden-crowned Kinglets* (new to the State in summer) and White-throated Sparrows* (previously a few late records), it would seem that there is little permanence about the presence in summer of these really northern species in a border state like Connecticut but that undoubtedly over a period of years instances of their presence in summer or sporadic nesting may accumulate. Others—like the Northern Water-thrush—not known to summer in Connecticut in 1913, have possibly increased. Those species which we may term lower or border-line Canadian—like Hermit Thrush, Blue-headed Vireo, Black-throated Blue, Blackburnian, and Canada Warblers—are apparently perfectly dependable, but after all they seem but slightly more northern than Alder Flycatcher and Purple Finch neither of which we are inclined to regard as characteristically Canadian species.

Throughout the upper portion of our section of the Housatonic Valley one largely escapes the curious co-existence of species representing unrelated faunal areas. There are relatively few southern species which penetrate this area to any extent and those that do, do not seem to favor the high altitudes at all; a notable exception of course being the Louisiana Water-thrush which takes advantage of suitable habitat practically wherever situated. The Canadian species are perfectly consistent in their preferences and requirements as elsewhere near New York though a few of them may be found at slightly lower levels in Litchfield which is of course to be expected.

*Both the Kinglets and White-throats "repeated" in 1934.

In the southernmost Litchfield County portion of the valley, however, where elevations are not great, we have enjoyed rather unusual combinations of summer birds. In 1932 a Hermit Thrush spent the summer on the hill opposite us (Schaticoke Mountain) apparently at about 800 feet and his song could be plainly heard from our front porch. That season a Canada Warbler doubtless nested in the same locality and a Northern Water-thrush lingered late but seemingly despaired of ever establishing friendly relations with a pair of Louisiana Water-thrushes then perfectly happy along the brook. But we had the benefit of his song and the "atmosphere" he helped to create. A Purple Finch then frequented the thicket on our north side and from back of us a pair of Chats regularly greeted the dawn and dusk* and Prairie Warblers and Grasshopper Sparrows seemed to exult in the heat of the day—their voices suggesting the inactivity of summer. A Rough-winged Swallow nested unconcernedly in our neighbor's bank and with the lusty cooperation of a covey of Bob-whites, there became confusion worse confounded. But the presence of nearly all was readily explainable on the basis of habitat preferences. More recently these particular northern birds have nearly all abandoned us to the tender mercies of the more heat-loving species.

The following excerpt from "The Sport of Bird Study," though written more than twenty-five years ago, is interesting in its contemporary application. "The region belongs to the Alleghanian faunal area but the higher elevations with their hemlock, mountain laurel, occasional black spruce and cold sphagnum bogs afford a mingling of the Canadian fauna, and the deep valleys of the Carolinian. There is still a fine field for original investigation amid this glorious scenery, and a number of other species can surely be added to this list, the ferreting out of which offers fine incentive and splendid sport to those who are so fortunate as to reside, permanently or temporarily, in these delightful surroundings."

*In fact one often sang from dusk to dawn on mild moonlight nights in May and June.

Eighteen Years of Wyanokie (1916-1933)

BY WARREN F. EATON

I. INTRODUCTORY

Most of the leading naturalists, bird students and ornithologists about New York, many of the Green Mountain Club and other outdoor enthusiasts have at one time or other attended the annual Wyanokie census, carried on under the auspices of the United States Biological Survey by the leadership, first of Professor W. S. Monroe and later by Mrs. Laura Woodward Abbott. This outing, started in 1916, has become a rite, an institution to be enjoyed and perpetuated. It consists of the arrival on Saturday afternoon, the walk in to camp, the pitching of tents, the 3 a.m. hot breakfast prepared by the efficient culinary department after a night on the ground in the woods, and then the census itself, held on the first week-end in June, never earlier than June first nor later than June eighth. As is usual with June counts, the singing male or a nest of a given species is the unit for enumerators and the party divides up to cover the same routes from year to year, starting before dawn and terminating about noon. A guide from the Green Mountain Club, an enumerator, experienced in bird song, usually from the Linnæan Society, and an assistant, or helper, to keep the record, constitute a party. The morale of the affair is excellent—good spirits, keen interest, no complaints at the weather and accuracy so far as possible. A tribute to the various participants is very much in order, as it is through them that the ornithological results are here made available. It is to be questioned if anywhere, since the Biological Survey started their cooperative figures, we have in existence data of such long standing, covering so large an area and so carefully accumulated from year to year over the same routes. A feature of particular interest is that after the census was begun, the North Jersey Water Supply Commission put in a reservoir (Wanaque) which flooded a portion of the area under consideration, making changes which have affected the bird population and on which comparisons can be made.

Originally there were ten separate routes all planned out within a three mile radius of the Green Mountain Club Camp near the abandoned Blue Mine about four miles west of Wanaque-Midvale, New Jersey. With the change caused by the construction of the reservoir the number of routes was cut to nine, two of them somewhat short-

ened, but as the area has been considered as a whole and little record of lists for each route kept, it has not affected the total comparative results.

2. GENERAL DESCRIPTION (as furnished to the Biological Survey)

The Wyanokie region as a whole, made popular by Professor Will S. Monroe and a host of other hikers, is a mountainous plateau with an average elevation of about five hundred feet, broken up by ravines and numerous hills from 1,000-1,200 feet above sea level. It is practically all wooded except a few open spots, some once cleared but largely overgrown, others still in grass, pasture or farm land. Three main brooks, Post, Blue and West, were tributaries to the Wanaque River on the east, which, as later noted, was dammed in 1925 to make a splendid reservoir surrounded by hills. The brooks were thus shortened and the river eliminated from the census area with its attendant modifications. There were changed besides a few small swamps and marshes, one large abandoned field grown up to cedars, witch hazel, grape vines and sumac, a bit of meadowland and poor farms mostly abandoned by the original settlers and in 1916 occupied by Italians. Five-sixths of the area is now (1933) wooded, although there are several stretches of country road and a half dozen farms still occupied, together with a number of summer camps. The roads and fields as a rule are lined with rail fences or stone walls supporting hedgerows with ample cover. Most of the cleared land is in pasture or grass, crops, hay or rye with small vegetable gardens.

3. CHANGES BROUGHT ABOUT BY THE RESERVOIR (listed chronologically below)

1921—Work began in the cedar field. Two small farms occupied in 1920 now abandoned and one torn down.

1922—One remaining farm now abandoned and all buildings in southern end of cedar field destroyed.

1925—No great changes except for continued destruction of vegetation in cedar field.

1926—Construction in the cedar field and at the dam caused combination of two of the ten routes making nine.

1927—All vegetation now removed from the three hundred foot mark down—all fences, buildings, etc., gone in this region.

- 1928—Construction complete and water filling in. Two trails reduced and a third modified by the changes.
- 1929—Borders of reservoir now growing up with young trees and shrubs. Many thousands of evergreens planted and seedlings and sprouts of forest making a good growth.
- 1930—Reservoir filled—continued growth of small trees.
- 1931-1933 inclusive—No further important changes as the condition of the reservoir is now permanent. Each year however the cedar field becomes more overgrown and the open areas smaller, except about the four most active farms.

4. THE ROUTES

The trails cover the most important geographic aspects of the country; the hills, West Brook Mountain, Windbeam, Carris Hill, High Point, Scarlett Hill, Wickadoma, and Pine Paddies; the shores of the reservoir on the west and southwest, the cove at Miller's Falls and at Blue Brook, the three tributary brooks, including the valley of West Brook to the Upper Macopin—West Milford Road at Long Swamp Mountain and Lake Iosco; and the swampy areas at Otter Hole along the reservoir and just south of the Burnt Meadows.

5. GENERAL LIST OF TREES (see appendix)

The forest is composed of second or third growth trees, denuded here and there by fires or by wood cutters but generally pretty thick except for bare ledges on a few of the hills. The valley of the West Brook above the Stephens' farm contains a fine stand of hemlock but the really large trees are few and far between, because of the thinness of the soil. The chestnuts, formerly one of the most important species here, were killed off by 1919 although there is an abundance of twenty to twenty-five foot shoots here and there today. The great bulk of the foliage is composed of oaks, maples, hickories, birches, etc., but the predominating trees are the chestnut and red oaks, the black, the white and the scarlet oaks, the red maple and many more of the species listed in the appendix. The woods are ninety per cent deciduous and of course filled with shrubs, flowers, vines and weeds as well, forming admirable cover for the birds each in its own habitat. In general it is a wild region where the raccoon and the fox, the deer and the mink abound and where natural conditions as a whole prevail.

6. GENERAL DISCUSSION OF BIRDS RECORDED

In the eighteen years, 1916—1933 inclusive, 140 species of birds have been recorded, June 1-8, a large list for such a homogeneous area but swelled by the inclusion of an appreciable number of migrants (less than one per cent of total however). For purposes of general discussion there have been listed 116 species either positive or potential breeders including the two hybrid warblers, and 24 migrants or non-breeding casuals. The actual nests and eggs or young have not been found of all the 116 but there is good evidence in most cases, even of the rarer ones, that they are summer residents and in only one or two instances is there the slightest shade of doubt about the identification. Furthermore, eighty-two species have been listed nearly every year in such numbers as practically to guarantee a yearly total of this figure. A study of this sort is of especial value not so much to show what we may find about the rarer species but about the fluctuations of the regular residents.

Any discussion of a June compilation of this sort will produce a certain element of criticism. It has been suggested that by taking such a census the first week in June there will be a percentage of migrants and of course this is true. It appears that when the census is taken the first four days there will be two-thirds as many migrants on the average as when taken the second four days, but on the other hand, dates when the Black-poll Warbler was not found were on two occasions, June 1 and 4, as well as June 6, 7 and 8. Of course in a year when the Black-polls are common, when the Olive-backed Thrush is in song or when flocks of Nighthawks are passing, then it is difficult to estimate the number of migrant Redstarts for example. On the other hand, by the second week in June it is harder to find the Blue-winged and Golden-winged Warblers, and really it would be better for census purposes to cover Woodcock, hawks, and owls in May than in June.

By using relative rather than absolute comparisons, it is safe to make use of census figures although of course many times they just bear out general conclusions the observers have made from year to year. It is the writer's personal opinion that for our purposes the census has been most successful and in general has been taken at the proper time of year. Any doubt as to the status of the Northern Water-Thrush, the Nashville and Canada Warblers has been removed by their regular occurrence in certain favored localities. For statis-

tical results it has been wiser to exclude the years 1916, 1917 and 1918 from the comparative compilations before and after the reservoir, as these years were not representative in their figures,—some of the files were lost, and by using the other totals only, we can compare seven years before and eight years after. The total number of species has varied from 70 in 1921 to 99 in 1927 and of breeders from 70 to 92. The variety of summer residents seems to have increased since the building of the dam but not the number of pairs.

1919-1925, inclusive	- - - - -	76.43 species avg.	2,563 pairs avg.
1925-1932, inclusive	- - - - -	84.0 species avg.	2,519 pairs avg.

Numerically 51 regular species showed a maximum year of abundance before 1925, while only 43 species showed a maximum after, where such a comparison could be readily made.

An amusing speculation can be started on the question of cycles. By referring to the chart on the Ruffed Grouse and a second chart on the total number of individuals recorded, it can be seen that in 1933 we were on the down grade of a recurrent cycle. (See page 25.)

In order to present the picture of the relative abundance of regular residents, I present on pages 23-24 a classification which is entirely relative but very nearly accurate in order of occurrence. The terms abundant, common, etc., are arbitrary, but represent certain well defined figures. In only one or two cases perhaps, the Crow and the Turkey Buzzard, are there any real inaccuracies, as these species are likely to be overcounted in contiguous areas.

To come to the specific changes that have taken place. With the advent of the reservoir came the first Mallards, Black and Wood Ducks, and sporadic occurrences of the Horned Grebe, Loon, Herring Gull, Red-breasted Merganser, and Canada Goose. On the other hand, the Warbling Vireo, Acadian Flycatcher, Red-headed Woodpecker, and Kentucky Warbler have not been seen in recent years. The Sparrow Hawk and Great Horned Owl were last recorded in 1927 and the Night Hawk, Marsh and Cooper's Hawk in 1928.

To deal more fully with other changes, I will mention certain groups and some of the outstanding and more obvious adjustments. Among the raptors there has been a notable increase in the Turkey Buzzard and in the Broad-winged Hawk, but a decrease in the Red-shouldered Hawk. The Barred Owl has been found more often, but all the other hawks and owls are so rare as to be a negligible quantity,

to the point where the Screech Owl has never been seen although it bred in the territory during at least one census year.

The game bird totals are very small indeed. The Ruffed Grouse has been shown by the chart in 1933 to be on the decrease, although it had just been through cycles of increase and decrease. The few ducks, Bob-white, Pheasant and Woodcock show signs of increase in numbers but the total recorded has been insignificant—seven pairs of Bob-whites, six pairs of Pheasants, and thirteen pairs of Woodcock. Most of the census area, however, is excellent natural territory for Grouse, only average for Woodcock, and very poor for Bob-white, Pheasant, and ducks, as there are no suitable breeding places for the last.

The herons show the benefit of the increased water area for feeding purposes, as the Green Heron more than doubled in numbers and the Black-crowned Night Heron first appeared in 1931 and 1932. The Great Blue Heron on the other hand was seen in three years before and only two years after the construction of the reservoir. Twice in the last three years a bird has been heard calling in the early morning from an arm of the reservoir, probably the Virginia Rail, although it has not been seen and there appears to be no suitable place for it to nest. Relative to the totals of all species the swallows have increased from 2.75 per cent to about 5.87 per cent, the increase being marked in all the species but the Bank Swallow which has no really suitable breeding place. The greatest increase has been in Cliff Swallow,* strangely enough for this bird is almost gone in all the rest of New Jersey. It has kept its foothold here and is encouraged on most of the farms by the money awards of the New Jersey Audubon Society. Mr. Noble Rhinesmith's colony numbers over one hundred pairs on his barns and is a most entertaining sight. As farms have been torn down or deserted, the birds have concentrated in half a dozen colonies in the Wyanokie area. To a lesser degree the Barn Swallow has increased for the same local reason, but the increase of the Rough-winged and Tree Swallows is due to the reservoir as their use of water areas as a feeding habitat is well known.

The figures of the woodpeckers are entertaining: absolutely static for the Hairy, exactly the same number before and after the reservoir; for the Downy a marked decrease; for the Flicker a marked increase, which however has been off the last few years.

*See page 23 for more recent trend.

	Before reservoir	After reservoir
Hairy - - - - -	8 avg.	8 avg.
Downy - - - - -	3.07 "	1.61 "
Flicker - - - - -	20.7 "	25.8 "

On the other hand, the Red-headed, which was listed in four out of the first seven years, has not been seen since 1922 and the Pileated which was suspected (by its drillings) was not recorded until 1926 when one pair was present. This bird has increased until ten were recorded by five different parties in 1932, not necessarily ten pairs but showing a great increase.

As the vireos and warblers are most abundant birds in our area a short analysis of their occurrence ought to show some entertaining results. The following fifteen species represent the forms which appear frequently and which compose almost 50 per cent of all the resident birds. Their relative abundance to the total has only slightly decreased, yet see how the proportions of the different species have varied. The Red-eyed Vireo, the Oven-bird, Black and White Warbler, Redstart, Black-throated Green, all birds of the deep woods, the Northern Yellow-throat, of the river bottom and willow thickets, all have decreased, while the Worm-eating, Chestnut-sided, Hooded, Blue-winged, Golden-winged Warblers, the Yellow-breasted Chat, the Louisiana Water-thrush and the Yellow-throated Vireo have shown an increase, by far the greatest being the Hooded, nearly fifty per cent.

COMPARATIVE ABUNDANCE OF WARBLERS AND VIREOS BEFORE AND AFTER BUILDING OF RESERVOIR. (Rarer species excluded.)

	Average before	%	Average after	%
Oven-bird (—) - - - - -	274	21.9	224	19.6
Red-eyed Vireo (—) - - - - -	268	21.5	202	17.7
Black and white Warbler (—) - - - - -	144	11.5	128	11.2
Redstart (—) - - - - -	128	10.2	106	9.3
Northern Yellow-throat (—) - - - - -	97	7.9	78	6.9
Worm-eating Warbler (+) - - - - -	69	5.6	73	6.5
Chestnut-sided Warbler (+) - - - - -	64	5.0	74	6.5
Hooded Warbler (+) - - - - -	47	3.8	80	7.0
Golden-winged Warbler (+) - - - - -	55	4.4	67	5.8
Blue-winged Warbler (+) - - - - -	26	2.1	33	2.9
Yellow Warbler (±) - - - - -	29	2.3	26	2.3
Louisiana Water-thrush (+) - - - - -	15	1.2	20	1.7
Yellow-throated Vireo (+) - - - - -	12	.9	14	1.2
Yellow-breasted Chat (+) - - - - -	11	.9	12	1.1
Black-throated Green Warbler (±) - - - - -	7	.6	7	.6
Average total 15 species before reservoir - - - - -			1248	% 48.7
Average total all species before reservoir - - - - -			2563	100
Average total 15 species after reservoir - - - - -			1143	43.2
Average total all species after reservoir - - - - -			2519	100

As our area has shown an increase of thick uniform woods, a decrease of river thickets, and a tendency for open fields to grow up into scrub and for scrub to become thick woods, it is reasonable to see the changes which have taken place. In general the denser woods harbor a smaller bird population than the more open areas of mixed growth, causing a relative drop in the Oven-bird, Red-eyed Vireo, etc., population, while conditions have become more favorable for the Hooded, Worm-eating Warblers, and Louisiana Water-Thrush by the increased area of the forest. On the other hand, pasture coming into second growth is best adapted to the Golden-wing, Blue-wing, Chestnut-sided Warblers and Yellow-breasted Chat. It is a sound prophesy, I believe, to state that in the next twenty years the trend will be the other way. The second growth will become forest, the pasture will disappear and the very species which have benefited by the second growth will decrease in proportion. Without doubt the other forest dwelling birds will tend to keep their present positions unless there is some other radical change in the environment.

Among the species which have retained about the same position are the House Wren, Robin, Wood Thrush, Blue Jay, Kingbird, Brown Thrasher, Least Flycatcher, Starling, Goldfinch, Song Sparrow, Yellow Warbler and Rose-breasted Grosbeak. A great decrease, just about fifty per cent, has occurred in Bluebird and Wood Pewee, while the Chimney Swift, Phoebe, Red-wing, Vesper, Field and Chipping Sparrows, Scarlet Tanager and Cedar Waxwing have dropped off. The Towhee, Cowbird, Whip-poor-will and Kingfisher have increased markedly, the Crow, Chickadee, Indigo Bunting, Baltimore Oriole, Catbird, Crested Flycatcher and Veery less so.

In looking over the data it is rather a pity that an accurate account has not been kept route by route and from year to year. Admittedly there is a chance for the totals to be affected by slight variations in the route or in the accuracy of counting when handled by different observers. In the main, however, we must make the most of the data we have.

Of the 24 species recorded which appear not to nest, some already mentioned are casual water-birds which visit the reservoir, some are irregular migrants or wanderers difficult to classify, like Wilson's Snipe, Osprey, White-throated Sparrow, Red Crossbill and Cerulean Warbler, possibilities as breeders but probably just delayed migrants. Most of

them it seems, are the final fringe of the northward migration, including the Yellow-bellied and Olive-sided Flycatchers, the Olive-backed and Gray-cheeked Thrushes, the Tennessee, Mourning Magnolia, Blackpoll, Bay-breasted and Blackburnian Warblers. The Magnolia and Blackburnian have been recorded nesting in northern and western New Jersey not many miles away and have as much reason to be in the list of regulars as the Prothonotary, Pine and Kentucky Warblers except for the more southerly distribution of the latter. It is not necessary to point out that Wyanokie is at the very latitude in New Jersey where the Transition, Canadian and Carolinian zones seem to merge almost imperceptibly. No better demonstration of this is needed than a reference to the remarkable work on the Brewster's Warbler, done here by Messrs. Carter and Howland of the Linnæan Society which has been written up elsewhere.¹ Thirteen Brewster's Warblers and four Lawrence's Warblers have been counted on the census, and there have been others found at other times and places in the neighborhood.

The mere association of the Turkey Buzzard, Cardinal, White-eyed Vireo, Titmouse, and Rough-winged Swallow in the same area as the Solitary Vireo, Nashville, Canada, Black-throated Green and Black-throated Blue Warblers is a point of interest. The general conditions, appear to be more Carolinian than Canadian, although the reverse is true not many miles away. What the Yellow-bellied Sapsuckers and Ruby-crowned Kinglets recorded in 1916 and 1924 were doing here is a matter of conjecture. It is always a great pleasure to realize that here is a large area where the Bald Eagle, Pileated Woodpecker, Ruffed Grouse, the larger hawks and owls and the Cliff Swallow still occur and where at other times of year other species like the many fresh-water ducks, or the Purple Martin and the regular passerine migrants may be found. A glance at Miss M. M. Monks' "Windbeam" is quite desirable in order to get a picture of the country before the reservoir, and a visit today will show it after.

In conclusion, I feel I can best show the relative density of certain of the birds by a comparison with other parts of New Jersey—a comparison greatly to the advantage of Wyanokie in many respects.

		Wyanokie	Montclair Region	Hudson Co.	Union Co.
House Sparrow	- - - - -	0.85	55.7	29.4	17
Starling	- - - - -	2.0	34.7	24.6	34
Robin	- - - - -	4.7	64.6	11.7	22
Song Sparrow	- - - - -	7.5	20.2	22.2	46

¹The Auk, July, 1923, p. 423.

	Wyanokie	Montclair Region	Hudson Co.	Union Co.
Red-eyed Towhee - - - - -	8.9	12.5	0.43	9
Purple Grackle - - - - -	0.51	15.5	3.4	8
Oven-bird - - - - -	27.9	6.1	.....	10.3
Scarlet Tanager - - - - -	10.7	3.7	.....	4.0
Barred Owl - - - - -	0.15	.....	.....	0.15
Veery - - - - -	1.6	1.1	0.14	5.2
Cliff Swallow - - - - -	7.3	.....	.....	.....
Redstart - - - - -	13.6	0.5	0.57	5.0
Hooded Warbler - - - - -	7.2	0.3	.....	0.6
Red-eyed Vireo - - - - -	26.4	10.1	0.3	12

These figures represent approximately the number of individuals of a species one should see in the respective area in an average (4 hour) day in the field, all based on actual counts. (Union County furnished by Mr. C. A. Urner).

SUPPLEMENT—THE 1934 CENSUS

The Wyanokie Census was taken again this year, showing a total of 84 species, 2,029 individuals including as migrants only 7 Black-poll Warblers (June 3). The more unusual records were Black Duck, 3 pairs; Woodcock, 1; Bald Eagle, 2 birds, 1 adult, 1 immature; Pheasant, 1; a high total of Yellow-billed Cuckoos, 29 (pairs), and Ruffed Grouse, 18 pairs, chiefly drumming males. The Red-eyed Vireo exceeded the Oven-bird in abundance and both the forest birds, the Scarlet Tanager and the Black-throated Green Warbler, showed marked increases. The Grasshopper Sparrow, White-breasted Nuthatch and Bluebird were not recorded; the decreasing and now rare Swamp and Vesper Sparrows were represented by only a pair each and a marked decrease over the past three years now becomes apparent in the Whip-poor-will and the Cliff Swallows. One of the barns formerly a breeding site of the latter bird was destroyed by fire and a second has been deserted for several years due to property being uninhabited. The most unusual and unexplained decrease was due to the carefully protected Noble Rhinesmith colony being reduced from formerly about a hundred pairs to the neighborhood of thirty.

RELATIVE ABUNDANCE IN ACTUAL ORDER (1916-1933)

	18 year totals		18 year totals
1 AND 2 VERY ABUNDANT		9.	Worm-eating Warbler - - 1104
1. Oven-bird - - - - -	3943	10.	Cliff Swallow* - - - - 1093
2. Red-eyed Vireo - - - - -	3563	11.	Crested Flycatcher - - - 1077
3 AND 4 ABUNDANT		12.	Chestnut-sided Warbler - - 1055
3. Black and White Warbler	2096	13.	Hooded Warbler - - - - 990
4. Redstart - - - - -	1808	14.	Song Sparrow - - - - - 975
5 TO 27 VERY COMMON		15.	Golden-winged Warbler - - 948
5. Scarlet Tanager* - - - -	1492	16.	Indigo Bunting - - - - - 735
6. Crow - - - - -	1473	17.	Wood Thrush - - - - - 679
7. Northern Yellow-throat -	1375	18.	Field Sparrow - - - - - 655
8. Towhee - - - - -	1166	19.	Robin* - - - - - 648
		20.	Chipping Sparrow - - - - 590

	18 year totals		18 year totals
21. House Wren - - - - -	579	70. Tree Swallow - - - - -	39
22. Least Flycatcher - - - - -	569	71. Ruby-th. Hummingbird - - - - -	37
23. Phoebe - - - - -	564	72. Canada Warbler - - - - -	30
24. Barn Swallow - - - - -	553	73. Spotted Sandpiper - - - - -	30
25. Cedar Waxwing - - - - -	534	74. Bank Swallow - - - - -	25
26. Blue Jay - - - - -	528		
27. Eastern Red-wing - - - - -	525	75 TO 87 RARE	
28 TO 51 COMMON		75. Barred Owl - - - - -	20
28. Wood Pewee - - - - -	454	76. Pileated Woodpecker - - - - -	19
29. Blue-winged Warbler - - - - -	445	77. Rough-winged Swallow - - - - -	19
30. Yellow Warbler - - - - -	421	78. Killdeer - - - - -	17
31. Catbird - - - - -	396	79. Black-thr. Blue Warbler - - - - -	15
32. Chimney Swift - - - - -	383	80. Northern Water-thrush - - - - -	14
33. Flicker - - - - -	354	81. Woodcock - - - - -	13
34. Chickadee - - - - -	318	82. Brewster's Warbler - - - - -	13
35. Kingbird - - - - -	303	83. Bobolink - - - - -	13
36. Brown Thrasher - - - - -	292	84. White-eyed Vireo - - - - -	13
37. Goldfinch - - - - -	287	85. Red-tailed Hawk* - - - - -	11
38. Baltimore Oriole - - - - -	281	86. Red-headed Woodpecker - - - - -	11
39. Louisiana Water-Thrush - - - - -	270	87. Sharp-shinned Hawk* - - - - -	10
40. Starling* - - - - -	266	VERY RARE (29)	
41. Ruffed Grouse* - - - - -	222	Have been found only a few times.	
42. Yellow-billed Cuckoo - - - - -	206	No attempt at order.	
43. Mourning Dove - - - - -	199	Mallard - - - - -	1
44. Veery - - - - -	197	Black Duck - - - - -	2
45. Yellow-breasted Chat - - - - -	185	Wood Duck - - - - -	8
46. Yellow-throated Vireo - - - - -	184	Black-crowned Night Heron - - - - -	5
47. Downy Woodpecker - - - - -	179	Virginia Rail - - - - -	2
48. Bluebird - - - - -	176	Bob-white - - - - -	7
49. Swamp Sparrow - - - - -	127	Pheasant - - - - -	6
50. Black-billed Cuckoo - - - - -	126	Sparrow Hawk - - - - -	8
51. Hairy Woodpecker - - - - -	122	Great Blue Heron - - - - -	8
52 TO 65 NOT UNCOMMON		Cooper's Hawk - - - - -	7
52. House Sparrow* - - - - -	109	Marsh Hawk - - - - -	5
53. Grasshopper Sparrow - - - - -	105	Bald Eagle - - - - -	5
54. Black-throated Green Warbler - - - - -	105	Great Horned Owl - - - - -	3
55. Whip-poor-will - - - - -	99	Acadian Flycatcher - - - - -	7
56. Red-shouldered Hawk - - - - -	99	Alder Flycatcher - - - - -	2
57. Turkey Buzzard - - - - -	98	Fish Crow - - - - -	2
58. Meadowlark - - - - -	97	Henslow's Sparrow - - - - -	2
59. Vesper Sparrow - - - - -	90	Warbling Vireo - - - - -	2
60. Rose-breasted Grosbeak - - - - -	85	Lawrence's Warbler - - - - -	4
61. Purple Grackle - - - - -	61	Parula Warbler - - - - -	6
62. Long-billed Marsh Wren - - - - -	58	Kentucky Warbler - - - - -	5
63. Cowbird - - - - -	56	Pine Warbler - - - - -	3
64. Orchard Oriole - - - - -	52	Prothonotary Warbler - - - - -	1
66 TO 74 UNCOMMON		Brown Creeper - - - - -	1
65. Kingfisher - - - - -	50	Tufted Titmouse - - - - -	2
66. Nashville Warbler - - - - -	48	Cardinal - - - - -	1
67. Green Heron - - - - -	48	Night Hawk - - - - -	8
68. White-breasted Nuthatch - - - - -	41	Solitary Vireo - - - - -	1
69. Broad-winged Hawk - - - - -	41	Screech Owl—(known to occur but never listed on census).	

*Note especially their relative position on the list.

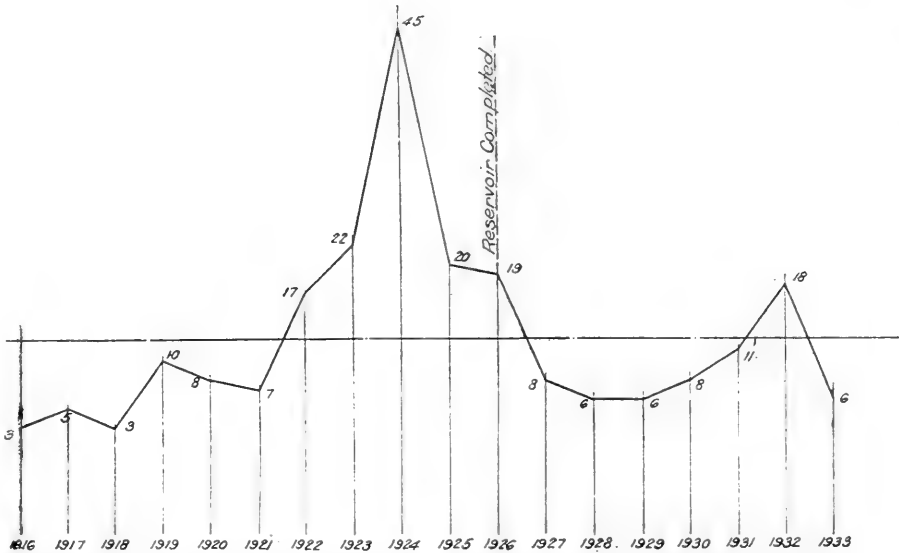
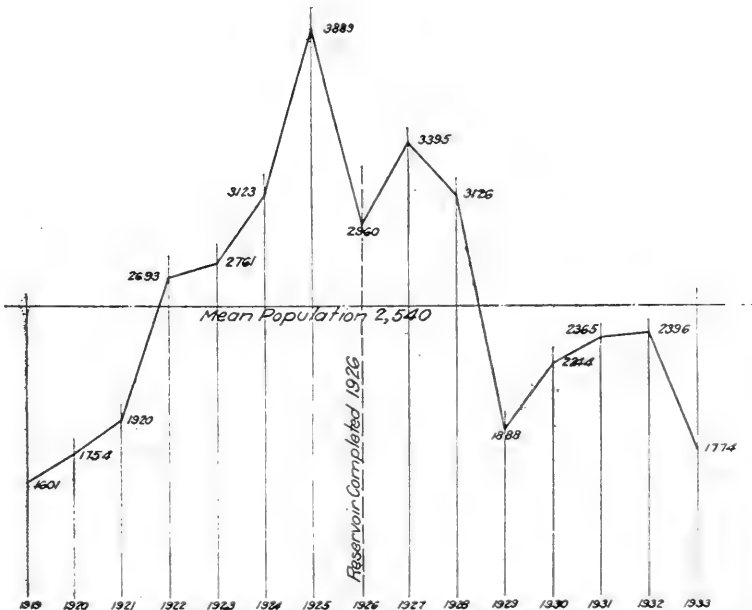


Chart of numbers of Ruffed Grouse found in years 1916-1933 inclusive. Note peak in 1924 and minor peak in 1932 - also how closely cycle corresponds with that of total individuals.



This chart indicates a possible cycle with lows in 1919 & 1933, high in 1925. Numbers on curve give number of pairs found each year (migrants excluded).

APPENDIX—LIST OF MORE COMMON TREES

(With the Aid of Mr. Ralph Holmes)

- | | |
|--|---|
| Chestnut Oak. <i>Quercus prinus</i> . | Slippery Elm. <i>Ulmus fulva</i> . |
| Red Oak. <i>Quercus rubra</i> . | White Ash. <i>Fraxinus americana</i> . |
| Red Maple. <i>Acer rubrum</i> . | Butternut. <i>Juglans cinerea</i> . |
| Black Oak. <i>Quercus velutina</i> . | Linden. <i>Tilia americana</i> . |
| Scarlet Oak. <i>Quercus coccinea</i> . | Shagbark Hickory. <i>Carya ovata</i> . |
| Sugar Maple. <i>Acer saccharum</i> . | Pignut Hickory. <i>Carya glabra</i> . |
| Black Birch. <i>Betula lenta</i> . | Sassafras. <i>Sassafras variifolium</i> . |
| Grey Birch. <i>Betula populifolia</i> . | Yellow Birch. <i>Betula lutea</i> . |
| Red Cedar. <i>Juniperus virginiana</i> . | Scrub Oak. <i>Q. prinoides</i> . |
| Hemlock. <i>Tsuga canadensis</i> . | Tupelo. <i>Nyssa sylvatica</i> . |
| Pitch Pine. <i>Pinus rigida</i> . | Chestnut. <i>Castanea dentata</i> . |
| Dogwood. <i>Cornus florida</i> . | Sumac. <i>Rhus typhina</i> ; <i>R. glabra</i> . |
| American Hornbeam. <i>Carpinus caroliniana</i> . | Shadbush. <i>Amelanchier canadensis</i> . |
| Poplar. <i>Populus grandidentata</i> (?) | American Elm. <i>Ulmus americana</i> . |
| Tulip Tree. <i>Liriodendron tulipifera</i> . | Sycamore. <i>Platanus occidentalis</i> . |
| Beech. <i>Fagus grandifolia</i> . | Cherries. <i>Prunus Pennsylvanica</i> . |
| Witch Hazel. <i>Hamamelis virginiana</i> . | <i>P. serotina</i> . |
| White Pine. <i>Pinus strobus</i> . | <i>P. virginiana</i> . |

Morse's American Bird Lists of 1789 and 1793

BY L. NELSON NICHOLS

(WITH INTERPOLATED COMMENT BY DR. ERNST MAYR)

This report on the two earliest bird lists of the United States constitutes as far as I know a prior record for a general American list. There were earlier local lists but they were incorporated into the two lists put out by Jedediah Morse in 1789 and 1793. Ornithologists go at once for bibliographical information to the well known lists of Dr. Coues, and to Dr. Chapman's Handbook, but in the records of neither of these authorities do we find any mention of Morse's lists of 1789 and 1793. I do not know that they have not been reported, but examination of the files of *The Auk*, and correspondence with various libraries show no record of a bibliographical or scientific report of such a notable effort as Dr. Morse's.

The first edition of Jedediah Morse's "The American Geography" was published at Elizabeth, N. J., in 1789, and was a work of 534 pages.¹ It had two maps and was an exhaustive work describing the United States in much detail. The work became the authoritative work on the description of the United States, as it was about the time of George Washington's inauguration.

On pages 59 and 60 of this work is a list of upwards of 130 American birds, many of them described by Catesby, Jefferson and Carver. This list does not have scientific names, but gives common names, probably those known to hunters and farmers. In this list are included the names of 33 birds contributed by Dr. Manasseh Cutler in manuscript to Dr. Morse. Dr. Cutler had some reputation on the side of botany as well as many interests in economic and political life, but this is the first we know of his bird interests.

Later editions of this work of Dr. Morse had the same list of 130 birds. A few years later Dr. Morse issued a more extended work along the same lines, but in two volumes called "parts." The first edition of this work was published in Boston in 1793 and was entitled: "The American Universal Geography."²

¹The American Geography; or, a view of the present situation of the United States of America . . . By Jedediah Morse. Elizabeth Town: Printed by Shepard Kollock . . . 1789.

²The American Universal Geography, or, a view of the present state of all the Empires, Kingdoms, States, and Republics in the known World, and of the United States of America in particular. In two parts . . . Part I. Being a New Edition of the American Geography, corrected and greatly enlarged. Printed at Boston, by Isaiah Thomas and Ebenezer T. Andrews . . . 1793. . . . Part II. Containing a Geographical Description of the Eastern Continent and Islands. Printed at Boston, by Young and Etheridge, for the Author and Thomas and Andrews . . . 1793.

In part one, beginning at page 188 and extending to the top paragraph of page 197, occurs the most extended bird list that had as yet appeared in America. Covering as it does nine full pages, it can be said to have been the first really important list of birds of the United States as it was at that time—mainly along the Atlantic seaboard.

Returning to an examination of the sources of the material of the earlier work—that of the 1789 list of 130 birds, we find one source to have been Mark Catesby³ whose well known work on *Natural History* appeared in 1754, and covered from the Carolinas south.

Another work, drawn upon for the 1789 list, is equally well known in bibliography: Thomas Jefferson's *Notes on the State of Virginia*. Jefferson completed this book in 1781, it was printed in Paris in 1782, but not actually published until 1785. Since the Paris edition was a very limited one, it is more likely that Dr. Morse used the Philadelphia edition,⁵ which was published in 1788, a year before Morse's list appeared.

The third source that Morse credits in 1789 was Jonathan Carver whose travels into the interior began in 1766 and the result of whose work around the Great Lakes and even west of the Mississippi were being published in various editions. It is quite likely that Morse used the Philadelphia edition of Carver's *Travels* published in 1789.

The introduction of the 1793 list published in the *American Universal Geography* of 1793 has Morse say (p. 188) that "no general catalogue of the birds in the American States has yet appeared." And then he adds, "The following catalogue, which claims to be the most full and complete of any yet published, though far from perfection, has been carefully selected from Bartram's *Travels*,⁷ Jefferson's *Notes on Virginia*, Belknap's *History of New Hampshire*,⁸ and a manuscript furnished by Dr. Cutler." Morse then gives the list with English and Latin names, saying it is given in the order used by Bartram.

³The *Natural History of Carolina, Florida, and the Bahama Islands* . . . By the late Mark Catesby . . . London. Printed for C. Marsh . . . 1754. 2 vols.

⁴[Jefferson, Thomas.] *Notes on the State of Virginia*; . . . [Paris] MDCCLXXXII. [Really 1785.]

⁵*Notes on the state of Virginia*. Written by Thomas Jefferson . . . Philadelphia: Printed and sold by Prichard and Hall. 1788.

⁶*Three years' travels through the interior parts of North America*. By Captain Jonathan Carver. Philadelphia: Printed by Joseph Crukshank, 1789.

⁷*Observations on the inhabitants, climate, soil, rivers, productions, animals, and other matters worthy of notice*. Made by Mr. John Bartram, in his *Travels from Pensilvania to Canada* . . . London. Printed for J. Whiston and B. White, 1751.

⁸*The History of New Hampshire* . . . By Jeremy Belknap . . . Philadelphia: Printed for the Author by Robert Aitken . . . 1784-92. 3 vols.

By typographical marks prefixed to the English names and the author's source names following the Latin names, it is possible to pick out those bird names which Dr. Cutler contributed to Morse's list. It seems worth while to tabulate all these birds, since it is likely that here in 1789 (and reprinted in 1793) certain species of birds were for the first time mentioned as occurring in North America. These are the species credited to Dr. Cutler [the numbering is mine] :

1. Royston Crow, *Corvus cornix*. Found in New England.
[He also lists the Common Crow, Fish Crow and the Raven.]
2. Swallow Woodpecker, *Picus hirundinaceus*. Found in New England.
[Tree Swallow?]
3. Speckled Woodpecker, *Picus maculosus*. Found in New England.
4. Cherry Bird, *Ampelis garrulus*. Found in New England.
5. Spring Bird, *Fringilla* [no second name]. Found in New England.
6. Winter Sparrow, *Fringilla grisea*. Found in New England.
7. Grape Bird, *Motacilla icterocephala*. Found in New England.
8. Tom Teet, *Parus atricapillus*. Found in New England.
9. Barn Swallow, *Hirundo subis*. Found in New England.
10. Night Hawk, *Caprimulgus americanus*.
[Cutler separates the Whip-poor-will and the Night Hawk. Bartram had considered them the same bird.]
11. Crane, *Ardea canadensis*. Found in New England.
12. Stork, *Ardea ciconia*. Found in New England.
13. Wood Snipe, *Scolapax fedoa*. No mention of area.
14. Ox Eye, *Tringa fulicaria?* No mention of area.
15. Humility, *Tringa interpres*. Found in New England.
16. Sea Duck, *Anas mollissima*. No mention of area.
17. Sea Pigeon, *Anas histrionica?* No mention of area.
18. Dipper, *Anas albeola*. Found in New England.
19. Cream-coloured Sheldrake, *Mergus merganser?* Found in New England.
20. Red Bellied Sheldrake, *Mergus serrator?* Found in New England.
21. Pyed Sheldrake, *Mergus castor?* Found in New England.
22. Penguin, *Alea impennis*. Found in New England.
23. Water Hen, *Alea arctica?* Found in New England.
24. Mackarel Gull, *Larus ridibundus*. Found in New England.
25. Fishing Gull, *Sterna minuta*. Found in New England.
26. Shag, *Pelicanus graculus*. Found in New England.
27. White Head Coot, *Anas spectabilis*. Found in New England.
28. Brown Coot, *Anas fusca*. Found in New England.
29. Peep, *Rallus carolinus*. Found in New England.

These 29 are names credited alone to Cutler, which seem likely to have been taken by Morse from Dr. Cutler's manuscript list. Two of the names, Crane and Water Hen, are in Morse's 1789 list. However, Cutler may have meant different birds for those common names. The

Latin names (apparently added by Dr. Morse to Cutler's vernacular names) are all from Linnæus with two exceptions: *Picus maculatus* from Scopoli, and *Fringilla grisea* untraced.

Cutler is credited jointly with Belknap (the author of the History of New Hampshire) in three names, as follows:

30. Sharp Winged or Speckled Owl, *Strix aluco*. [Short-eared Owl?]
31. Barn Owl, *Strix passeri*.
32. Bird Hawk, *Lanius canadensis*. [Shrike.]
33. The Yellow Bird is given as Cutler's alternative name for the Gold-finch.

The above 33 are the names that Morse credits to Dr. Cutler out of his total list of 258, though he adds eight other names that he thinks may have been birds in the list under different names, which seems likely. There are a few names in the list of 258, maybe as many as 6 or 7, that are probably duplicating the bird, but almost certainly there are over 250 different kinds of eastern North American birds credited in Morse's list of 1793.

[Mr. Nichols has asked me to attempt to identify the birds contributed by Dr. Cutler by their present scientific names. This task is made quite difficult, since Cutler obviously was not a taxonomist. The Latin name (taken from Linné) applies in more than half of the cases to a different species than the vernacular name. Assuming that Cutler was not a bookworm, but rather a naturalist who had his knowledge of the bird life from hunters and fishermen, I shall ignore the list of Latin names and interpret the common names in our present day terms. Mr. Allan Moses (Grand Manan) has told me that many of these names are still in use along the New England coast, and very kindly "translated" them for me. Some are also listed in Forbush's 'Birds of Massachusetts' and other bird books.

Of the 29 birds listed on p. 29 I cannot identify *four* namely Nos. 1, 2, 7, 12 (using Mr. Nichols' numbers). *Seventeen* of the species had been known as American birds already previous to Morse and had received scientific names, mostly based on the writings of Catesby, Edwards, Pennant, Daubenton, and Brisson.

3. Hairy Woodpecker, *Dryobates villosus* (Linnæus) 1766 (C).
6. Junco, *Junco hyemalis* (Linnæus) 1758 (C).
8. Chickadee, *Penthestes atricapillus* (Linnæus) 1766 (B).
9. Barn Swallow, *Hirundo erythrogaster* (Boddært) 1783 (D).
10. ? Night Hawk, *Chordeiles minor* (Forster) 1771 (C).
11. Crane, *Grus canadensis* (Linnæus) 1758 (E).

The Crane occurred in New England in Cutler's time. At present the name Crane usually refers to the Great Blue Heron.

13. Woodcock, *Philohela minor* (Gmelin) 1789 (P).
15. ? Spotted Sandpiper, *Actitis macularia* (Linnæus) 1766 (E).
17. Guillemot, *Cephus grylle* (Linnæus) 1758.
18. Buffle-head, *Charitonetta albeola* (Linnæus) 1758.
20. Red-breasted Merganser, *Mergus serrator* (Linnæus) 1758.
21. ? Hooded Merganser, *Lophodytes cucullatus* (Linnæus) 1758 (C).
22. Great Auk, *Plautus impennis* (Linnæus) 1758.
24. ? Laughing Gull, *Larus atricilla* (Linnæus) 1758 (C), or ? Common and Arctic Tern, *Sterna*.
27. Surf Scoter, *Melanitta perspicillata* (Linnæus) 1758 (E).
28. Any immature or female Scoter.
29. Semipalmated Sandpiper, *Ereunetes pusillus* (Linnæus) 1766 (B), or any small sandpiper.

The remaining eight names belong to species or subspecies which were not yet scientifically named in 1793. Most of these however, had been previously reported from North America, although under different names.

4. Cedar Waxwing, *Bombycilla cedrorum* (Vieillot) 1808.
5. ? Song Sparrow, *Melospiza melodia* (Wilson) 1810.
14. ? Least Sandpiper, *Pisobia minutilla* (Vieillot) 1819.
16. American Eider, *Somateria mollissima dresseri* (Sharpe) 1871.
19. American Merganser, *Mergus merganser americanus* (Cassin) 1852.
23. Some species of grebe, possibly Holboell's Grebe.
25. ? Least Tern, *Sterna antillarum* (Lesson) 1847.
26. ? Double-crested Cormorant, *Phalacrocorax auritus* (Lesson) 1831, or ? European Cormorant (Linnæus) 1758.

E. Mayr.]

A few curiosities of name or comment are worth quoting. The owl list has eight names. The vulture list has three names: Turkey, White Tailed, and Black. The eagle and hawk list has 15 names. The kite hawk list has three names: Forked Tail, Sharp Winged pale color, and Sharp Winged dark color. There is the one parrot of Carolina or Parrakeet with the comment that they "are natives of Carolina, Georgia and Florida; where they breed and continue the year round." The crow list has ten names including besides the Raven, Common Crow, Blue Jay, the Great Seaside Crow or Rook, and the Royston Crow, previously referred to as Dr. Cutler's addition. The other five crows listed were the Little Jay of Florida, Cuckow of Carolina, Whet Saw and the two Gracula that he calls Jackdaws or Crow Blackbirds. The woodpecker list has ten names and also appends to this list the names of 37 miscellaneous birds such as nuthatches, creepers, King Fisher, Humming Bird, fly catchers, doves, larks, thrushes, Baltimore Bird, Cedar Bird, etc. In the Granivorous Tribes he gives 62 names.

*Most of these comments are taken from Catesby's Natural History.

These include not only Wild Turkey, Partridge, and Quail, but also most of the sparrows and finches, wrens, and our modern groups of warblers, swallows, and goat suckers. Of the Rice Bird in this group he says that "the rice bird and pied rice bird are generally supposed to be male and female of the same species." He also gives the New England names for the bird as Boblincoln and Conquedle. Some names of other birds in this Granivorous list that sound interesting are Red Linnet, Blue Linnet, Spring Bird, Hemp Bird, Reed Sparrow, Snow Bird, May Bird, Redwinged Starling, Cowpen Bird, Blue Bird, Yellowhooded Titmouse, Black Cap Titmouse, Yellow Rump, Little Chocolate Breast Titmouse, Yellow-Red Pole, Blue Winged Yellow Bird and Yellow Throated Creeper. Most bird students can make likely guesses as to the modern names of these.

Of the Amphibious or Aquatic Birds, Morse lists all the other birds. Here we note such interesting names as Marsh Bittern or Indian Hen, Quaw Bird or Frog Catcher, Poor Job, Spoon Bill (as far north as the River Alatomaha), Crying Bird, Spotted Tring, Buffaloe Head, Sprigtail Duck, Old Wife, Dobchick or Notail, Penguin, Sea Swallow or Noddy, Will Willet, Peep, and Flamingo. Of the last Morse says it is seen about the point of Florida, rarely as far north as St. Augustine.

On page 196 of Dr. Morse's book are a few notes worth quoting:

"The Ptarmigan (*Tetrao lagopus*) ordinarily inhabits the colder climates about Hudson's Bay, but is sometimes driven, through want of food, to the more southern latitudes. In the winter of 1788 these birds were taken plentifully about Quebec. Whenever the winter of the Arctic region sets in with rain, so as to cover the branches and leaves of trees with a glaze of ice, they are deprived of their food, and obliged to fly to the south, to a milder climate, where it can be procured. Hence they frequently visit the United States. Their feathers are mostly white, covered with down to the nails, and their flesh black of an exquisite relish."

Probably this is a different bird from Bartram's Mountain Cock or Grouse, though both have the same Linnæan name.

"The Quail or Partridge (*Tetrao minor*, *f. coturnix*). This bird is the Quail of New England, and the Partridge of the southern states: but it properly is neither. It is a bird peculiar to America. The Partridge of New England (*Tetrao tympanus*) is the Pheasant of Penn-

sylvania, but is miscalled in both places. It is a species of the Grouse. Neither the Pheasant, Partridge, or Quail, are found in America."

Then this about a bird, without a scientific name, not given in his list:

"The Wakon Bird, which probably is of the same species with the bird of Paradise, receives its name from the ideas the Indians have of its superior excellence; the Wakon Bird being in their language the bird of the Great Spirit. It is nearly the size of a swallow, of a brown colour, shaded about the neck with a bright green. The wings are of a darker brown than the body. Its tail is composed of four or five feathers, which are three times as long as its body, and which are beautifully shaded with green and purple. It carries this fine length of plumage in the same manner as the peacock does his, but it is not known whether like him, it ever raises it to an erect position."

Finally Morse gives this as his concluding paragraph on birds:

"The Humming Bird (*Trochilus colubris*) is the smallest of all the feathered inhabitants of the air. Its plumage surpasses description. On its head is a small tuft of jetty black; its breast is red; its belly white; its back, wings and tail of the finest pale green: small specks of gold are scattered over it with inexpressible grace: and to crown the whole, an almost imperceptible down softens the several colours and produces the most pleasing shades."

These quaint comments have the sound of sincerity. Crude as Dr. Morse's comments and lists naturally were, they showed a laudable and notable effort on his part. To compile at that early time a list of 250 eastern North American birds was certainly consistent with the energy and intelligence of the men who were the founders of our Republic.

Rhode Island Bird Records From 1781 to 1804

Compiled from TOM HAZARD'S DIARY

BY L. NELSON NICHOLS

Thomas Hazard of Kingston, R. I., known as Nailer Tom, kept a diary nearly all his life time. He was born in 1756 and died in 1845. He began his diary in 1778 and as early as 1781 there appeared in this diary some bird items. In his trade as an iron worker and nail maker there would not seem to be many bird references, but his activities were so various and his hunting and fishing trips so frequent in his earlier years, that birds appeared often in his diary though he was rather indefinite as to his hunting results.

The diary published in 1930 by Caroline Hazard¹ is a bulky volume of 808 pages and there is no index. But the digger for curious Rhode Island local information finds this man "Nailer Tom Hazard" a very interesting Quaker personality. I have read down to the end of the year 1804 and find in those 24 years of 1781 to 1804 exact dates for about 40 kinds of birds. Some of these names are so queer that we can only guess what they mean. Among ducks and birds we would see at the shore, I find these:

Gull is referred to but twice, Aug. 10, 1785 and Feb. 27, 1790, the latter caught in a steel trap.

Goose, many references in nearly every month, possibly a few refer to tame geese, but most of them to wild geese that were shot. The first reference was Mar. 29, 1782 when he went to shoot ("shutte") geese—but they had all left the Cove.

Wild Fowl, frequent references in nearly all months.

Sea Fowl, also frequent references.

Crane, frequent observations of this, the Great Blue Heron, and sometimes he shot at them.

Dipper. Dates are in October, November and February.

Broadbill. Only two dates: Feb. 21, 1784, and Apr. 20, 1785.

Wood Duck. Dates in the months of July to November only.

Black Duck. Dates in the months of September to December and one other—Mar. 23, 1800.

Waterwitch. Dates from Sept. 16 to Oct. 10, all in the year 1785.

Sheldrake. Dates in December to April, the latest being April 3, (1804).

Teal. Dates frequent but always in September and October. On one trip, Oct. 7, 1796 he shot 7 Teal.

Old Wife Duck. Two dates, Nov. 16, 1786 and Jan. 26, 1799.

¹Nailer Tom's Dairy, otherwise The Journal of Thomas B. Hazard of Kingstown, Rhode Island, 1778 to 1840 . . . Printed as Written and Introduced by Caroline Hazard . . . Boston, The Merrymount Press, 1930.

Widgeon. Two dates, Oct. 19 and Nov. 15, 1790.

Gray Duck. One date, Oct. 22, 1794, shot by a Daniel Williams.

Winter Teal. One date Apr. 6, 1795, shot.

Cricker. One date Sept. 20, 1796, shot.

Sea Crow. Frequent references in 1785, all in October, but just one previous date Apr. 20 of the same year; no mention of the bird after Oct. 1785.

Cormorant ("Cormant") One date Oct. 22, 1785 brought by another man.

Large Black Fowl. One date May 1, 1791 shot in his own pond.

Plover. Dates in August and September only.

Dung Hill Cock. Two dates. Jan. 10, 1782 (shot at) and June 13, 1804.

Duck is referred to without any specific name in April, and again from July to October of various years.

Shikepoke ("Shite Poke") probably the Green Heron, is mentioned once, Oct. 11, 1783—shot.

Marsh Hen. One date, Aug. 11, 1785 shot by another man.

Hawk was referred to four times.

Apr. 14, 1785 when it killed a hen.

Sept. 6, 1790 shot at.

Oct. 12, 1790 killed a chicken and was shot at.

Sept. 13, 1804 shot one and son Tommy shot one.

Eagle was referred to three times.

Feb. 16, 1784 shot and got one that had a Dipper in its claws.

June 10, 1785 shot at.

Feb. 15, 1790 shot at.

Owl was referred to five times.

Dec. 18, 1782 shot.

Jan. 23, 1784 shot.

May 17, 1784 went to get a shot at an owl but he flew.

Feb. 19, 1785 shot but did not kill him.

Jan. 25, 1800 shot.

Hazard did not use the word Partridge, but did mention Quail frequently—always from October to February and not the other months, except one date Apr. 11, 1783 when he shot two. On Oct. 22, 1794 he killed 8 in one shot.

In Feb. 1785 they were trapping them.

Turkey. There were about a dozen references to them, but as they shot birds out of their own flocks it is hard to say that any one was a Wild Turkey. 1790 they had a roasted Turkey that he got from Ray Mumford the 22nd. Mumford may have shot it wild.

Kingfisher. Two dates. Sept. 20, 1785 and Sept. 7, 1792—both shot.

Kingbird, he notes once—July 3, 1781. He fired at them.

Crow—he referred to but four times.

Dec. 24, 1790.

Oct. 10 & 22, 1796.

May 20, 1797—all shot.

Black Bird he referred to May 29, 1784—shot three.

Martin, had but one reference, July 30, 1785, when he shot two.

He made no mention of the Swallow.

He referred to Sparrow once, Oct. 2, 1785, caught in the house and let go. Robin came to his attention only six times. The earliest seasonal date was Apr. 16 (1790). The other dates were in July, August and September. Snow Lark has one date—Mar. 14, 1795.

As Wild Pigeons are extinct, it is worth while giving the most careful attention to any record of them. Nailer Tom Hazard made his first record of them July 5, 1784. He was 28 years old and his diary fairly full of general information for at least three years before. But not a word about Pigeons did he note, until in July, 1784, he became profuse with notes about them. Here are his records:

- July 5, 1784. "I shott 4 wild Pigeons."
- July 8, 1784. "last 2d day I wounded a wild Pigeon and last 3d day made a Cage for it."
- July 10, 1784. "I wing broke a pigeon and putt him in a cage."
- July 12, 1784. "Joshua Card . . . gave me 5 wild Pigeons."
- Aug. 18, 1784. shot two.
- Dec. 24, 1784. "Kild my two Pigeons." (Those in the Cage?)
- July 11, 1785. "Shott at Pigeon the gun blowd and I mist him."
- Aug. 5, 1785. shot two.
- Aug. 11, 1785. bought 4 of Joshua Card he shot.
- Aug. 23, 1785. shot one.
- Aug. 25, 1785. bought of William Card 10 Pigeons and one Wood Duck for 1s. 7½d.
- Aug. 31, 1785. he and Daniel Gardiner went to the Pond to shoot Pigeons. He shot two and Gardiner two.
- Sept. 7, 1785. wounded two.
- Sept. 12, 1785. "the Pigeons flew very much. I shott at some but kild none."
- Sept. 17, 1785. "Went up back of Wilkerson Browning orchard and kild 5 wild Pigeons in the morning."
- Sept. 20, 1785. "Went up in the woods & kild one Pigeon. Acus Card sent me 4 Pigeons and King Fisher."
- Sept. 21, 1785. shot one Pigeon.

Then there was no more Pigeon shooting for 1785, though he did shoot other things that Fall. But it is strange that there were no more records at all of Wild Pigeons in his diary down to 1804 (at least). It may be that the general statement of "went hunting" covered a multitude of Wild Pigeons. Or did they become scarce, or less interesting, or easier to shoot? Or if we prefer a more sentimental reason may there have been something in his Quaker training that made him a little ashamed to shoot and kill living creatures. There are all the years from 1778 to 1784 without a word of killing pigeons. And again the same silence after 1785.

The Eel Grass Blight on the New Jersey Coast

BY CHARLES A. URNER

The decrease in eel grass *Zostera Marina*, which has been reported in recent years over most of the Atlantic Coast range of this useful plant, became serious in Barnegat Bay and vicinity during the summer of 1931. Baymen then noticed that the flats, formerly green with a thick growth of the plant, were entirely bare, the disappearance being noted first on the flats near Barnegat Inlet, where the salinity of the water is practically full sea strength, and later in areas of the bay miles from the Inlet, where salinities are lower but vary considerably with the tide. Seeking a cause for the trouble some baymen blamed the shrimp gatherers who use power boats with drags, combing the vegetation for small shrimp to be used by weakfishermen. It was believed that the drags tore out the eel grass by the roots, and agitation was started to prohibit this method of shrimp gathering.

That same summer a salt water plant known locally as Nigger-Wool (*Enteromorpha*, sp.?) became much more prevalent than usual in certain sections of the bay, making passage of power boats difficult and filling up some of the empty spaces left by the dying eel grass.

An examination of the eel grass and its roots that year showed most plants affected with some form of blight or rot which eventually proved fatal.

The diseased condition spread during 1932 and rapidly extended over most of the eel grass area in Barnegat Bay, Manahawkin Bay, Little Egg Harbor, and Great Bay. It is probable that the specific cause of the trouble had been operating prior to 1931, for the writer, who made the trip on foot from Seaside Park to Barnegat Inlet along the east shore of the Bay at regular intervals each summer looking for shore-birds, had noticed as early as 1929 that the drift was reducing in volume and that the dense beds of floating eel grass in the coves, attractive as a feeding ground to many shore-birds, were becoming less extensive each summer. But the greatest damage to the eel grass occurred in 1931 and 1932.

The effect of the serious diminution of this plant upon aquatic life of the Barnegat region has been profound. Eel grass formerly prevented or reduced extensive shifting of sand in the bay; it sheltered a vast amount of life—food both for fish and fowl; it constituted a very important source of food for Brant, being almost the sole diet

of great flocks of wintering birds, and represented also an important part of the diet of Canada geese and certain ducks.

When the eel grass supply was normal a relatively large number of Brant, and many Canada Geese, wintered between Great Bay and Barnegat Inlet, and large numbers of Canada Geese and Brant swarmed into the bay on their way north, arriving in mid-February, many staying into March or even April, depending on weather conditions. Things are very different today. In the fall the flocks of Brant, migrating south, dip low as they reach the bay, but seeing nothing but white sand on the flats and shallows, mostly pass on to the south in search of better fare. Fewer Canada Geese stop on their southern flight, and the winter and spring Canada Goose and Brant population of the bay has fallen to but a fraction of former numbers.

The largest number of Brant I have ever seen in the Barnegat area was on February 22, 1925, when, in company with Ludlow Griscom and J. A. Weber, we estimated 80,000 birds in great rafts, miles long, mostly between Little Egg Harbor and Manahawkin Bay. The same day we estimated 20,000 Canada Geese present. Compare this great total with the winter's high count for the same area in the 1932-1933 season. The largest number of Brant seen was 1,800 and of Geese 550.

Some of the Brant formerly wintering in the Barnegat area have taken up winter quarters in Absecon Bay, near Atlantic City. Fully 10,000 wintered there in 1931-1932 and again in 1932-1933, though this flock was probably not larger than 2,000 during the winter of 1933-1934. Their chief food seemed to be cabbage or sea lettuce (*Ulva lactuca*) though they secured some eel grass according to local hunters. Most of the birds formerly wintering from Great Bay north on the Jersey Coast now apparently go further south in search of food, if they are still alive.

The Brant killed in Barnegat Bay in the fall and early winter of 1932 were mostly fat and in good condition, in better condition, in fact, than they had been reported the previous year. But on the spring return flight in 1933 there were a good many weak birds and the few small flocks that stopped in Little Egg Harbor and north of Barnegat Bay were forced to resort to the salt marshes and the Bay islands where they could be seen walking about, pulling up the roots of the salt marsh vegetation. Some killed out of season were reported by natives as strong flavored and not good eating though not emaciated.

The birds wintering about Absecon Bay and Brigantine in 1933-1934 had changed their feeding habits entirely, feeding on the meadows on the roots of sedges and on sea lettuce and even in periods of severe weather on clams found on the sea beach (Potter). They seemed in good condition.

There has been a sharp drop in numbers of Canada Geese in Barnegat Bay since the eel grass died out. On the flats west of West Point Island, north of Seaside Park bridge, geese formerly congregated by the thousands after the ice went out in the spring. In the spring of 1933 and 1934 there were rarely as many as 50 geese on these flats. Similarly, in the coves near shore from Manahawkin Bay south, where thousands of Canada Geese and Brant could be found feeding each spring prior to 1928, few, if any, were seen in 1933 and 1934.

The following table will give an idea of the extent of the drop in numbers of Brant and Geese in Barnegat Bay (Manahawkin Bridge north to Bayhead), from the fall of 1927 to the spring of 1933. The counts represent the total of the monthly census figures for the area as compiled by the writer. The decrease in the area between Manahawkin Bridge and Great Bay, to the south, has been even more marked.

TOTALS OF MONTHLY COUNTS OF CANADA GEESE AND BRANT
IN BARNEGAT BAY, N. J.

	Canada Geese	Brant
1927-28 - - - - -	7,640	28,800
1928-29 - - - - -	5,821	25,090
1929-30 - - - - -	5,612	17,603
1930-31 - - - - -	2,752	11,550
1931-32 - - - - -	3,952	5,400
1932-33 - - - - -	1,884	2,320

As to the future, there is of course hope of a cessation of the disease, though nothing very encouraging in the immediate outlook. There is definite danger that the plant, with the Chestnut tree, will disappear as an important element in the flora of the State, causing a large economic loss in reduced fish and game life. There were some healthy patches of seedling eel grass in Great Bay early in 1933 growing season, but some of these, examined later, began to show disease. The writer heard of no large healthy fruiting stands of the plant in the general Barnegat area in the summer of 1933, though there was some increase in drift and in new young growth in the fall of that year, and some 1934 evidence that new growth is exceeding the kill.

What Ditching and Diking Did to a Salt Marsh

BY CHARLES A. URNER

Looking through an old school book the writer recently came upon a memorandum of birds seen by him during a June day in 1898 while hunting nests and eggs on the Newark-Elizabeth salt marsh. These salt meadows are today, and were back in 1898, crossed by a railroad which, in the days before the marsh had been ditched, prevented a complete circulation of the tide and gave half of the marsh at least part of the year a plentiful supply of still, brackish water, held at a reasonably uniform level. There were then many ponds, bogs and a few creeks, cut off from the ebb and flow of the tides, and large cattail beds and beds of "triangle sedge," little molested during the breeding season.

I was able to decipher most of the figures on the old sheet and I compare them herewith with some more recent counts.

The ditching of the marsh had already begun to have an effect when my records were resumed in 1916. This was especially true of the inside brackish portion. The outside area, freely open to the tides in the old days, was not extensively ditched and diked until about 1923.

The periods separated in the table mark progressive steps in the ditching and diking operations. The final step has resulted in a much lower summer water level over all but a small fringe of the marsh, forcing, in years of average rainfall, a thorough summer drying of the ponds and marsh surface and a decided change in vegetation over wide areas.

I have considered only the strict marsh nesting birds, and those upland birds which have come in since the diking.

The various periods here separated may be briefly differentiated as follows:

1898—Unditched. Marsh east of railroad open to tide but ponds undrained; very wet. Area west of railroad with many ponds and much wet meadow and some cat-tail swamp; very wet.

1916-1920—Ditching started. Brackish area west of railroad much better drained, lowering water level and drying most ponds in summer. Cattail receding.

1921-1922—Extensive ditching supplemented by diking, further lowering water level both east and west of railroad, bringing decided changes in vegetation but not drying ponds and creeks east of railroad.

1923-1926—Diking better perfected and tide gates at creek entrances so lowered water level that all ponds and wet spots dried in summer. Most ponds dry or nearly dry.

1927-1932—Water level further lowered in summer by more complete ditching and more perfect tide gates. Ponds dry most of summer, except immediately after rain. Creeks low and partly dry.

YEAR'S MAXIMUM BREEDING SEASON COUNTS
NEWARK-ELIZABETH SALT MARSH

	1898	1916-1920	1921-1922	1923-1926	1927-1932
Pied-billed Grebe - - - - -	2	....	....	....	....
Great Blue Heron - - - - -	....	....	1	....	3
Eastern Green Heron - - - - -	8	1	3	....	....
Black-crowned Night Heron - - - - -	4	5	6	10	45
American Bittern - - - - -	5	1	2	2	2
Eastern Least Bittern - - - - -	2	....	....	....	....
Common Mallard - - - - -	....	....	....	1	1
Common Black Duck - - - - -	....	....	5	3	13
Marsh Hawk - - - - -	5	2	4	4	2
Pheasant - - - - -	....	....	....	1	4
Northern Clapper Rail - - - - -	6	*	4	....	....
Virginia Rail - - - - -	14	*	8	2	....
Florida Gallinule - - - - -	15	*	....	....	....
Killdeer - - - - -	....	1	1	3	18
Upland Plover - - - - -	....	....	....	....	4†
Spotted Sandpiper - - - - -	....	....	1	2	4
Short-eared Owl - - - - -	....	....	4	9	2
Long-billed Marsh Wren - - - - -	100+	75	25	17	20
Bobolink - - - - -	10	15	20	21	32
Eastern Meadowlark - - - - -	10	19	30	26	45
Eastern Red-wing - - - - -	75+	60	45	35	27
Eastern Savannah Sparrow - - - - -	....	....	2	5	44
Grasshopper Sparrow - - - - -	....	....	....	....	5
Sharp-tailed Sparrow - - - - -	100+	*	95	50	45
Seaside Sparrow - - - - -	*	*	4	8	3
Swamp Sparrow - - - - -	100+	75	11	10	22
Song Sparrow - - - - -	15	15	15	20	13§

(Short-billed Marsh Wren appeared as a breeder in 1933.)

Of the species listed as of June occurrence Great Blue Heron and Black-crowned Night Heron are not known to have bred within the area of the marsh.

*Haunts not covered thoroughly and representative count lacking.

†Calling adult in late May and later 2 adults and probably 2 grown young.

§Large increase on dry "islands" in marsh not considered.

There was, of course, much variation from year to year in the June counts but in brief the table gives a condensed picture of the numerical trend as influenced by the prevailing changes, either directly or indirectly.

Of the 27 species listed, eleven showed a definite reduction in numbers, five of these disappearing; thirteen showed a definite increase, ten of these not being recorded in 1898; three species showed no definite trend. The ditching, diking, and filling-in have therefore tended to increase the total number of breeding season species, though it is uncertain whether or not the total number of individuals has been helped. We believe the reverse is true today and that there are fewer pairs of birds nesting on the area today than formerly, due chiefly to the decrease in Red-wings, Sharp-tailed Sparrows, Swamp Sparrows, and Long-billed Marsh Wrens. The increase in Bobolinks, Meadowlarks, Savannah Sparrows, and Grasshopper Sparrows has not, to date, compensated for these losses, and dry fill and phragmytes beds do not support as concentrated a bird population as wet marsh.

But the comparisons do show that with the damaging effects of changing environment there are always compensations if vegetation persists, so diverse and so adaptable is our bird life.

The apparent increase in Black Ducks during the breeding seasons of the later periods was due in part to less spring hunting in recent years; also to the fact that enough water was available in some of the creeks to raise the young after ditching, and the keeping out of high tides prevented the flooding of nests during incubation.

Of the species listed as of June occurrence Great Blue Heron and Black-crowned Night Heron are not known to have bred within the area of the marsh.

Observations From Field and Study

Some Little Known Notes of the Blue-headed Vireo (*Vireo solitarius solitarius*)—During the first cooperative breeding-bird census undertaken by the Society—to Lake Mashipacong, New Jersey, June 12 to 15, 1925—Mr. Urner and I observed a singing Blue-headed Vireo near High Point, N. J. In the immediate surroundings, the notes of what was believed to be a Red-breasted Nuthatch were heard and reported tentatively though a search for the bird was unsuccessful.

On another well-remembered occasion—June 10, 1931—Messrs. Farley, Hickey, and I heard what we took to be the notes of a Red-breasted Nuthatch in a high portion of Putnam County, east of Cold Spring, N. Y. A Blue-headed Vireo, which seemingly nests there regularly, was much in evidence, but the nuthatch defied discovery. What manner of nuthatch was this? We were beginning to have our doubts.

"On a number of different occasions," writes Mr. Aretas A. Saunders, "I thought I heard the call of a Red-breasted Nuthatch in the Allegany State Park, a short, quick, nasal 'eh-eh-eh-eh.' The bird has never been found in Allegany Park in summer and I was on the alert, hoping to discover it. Then one day last summer I heard this note directly over my head. Looking up, I discovered that the bird producing it was a Blue-headed Vireo" (University of New York, Bulletin to the Schools, Vol. 18, No. 13, March 15, 1932, under title "Vireos are more likely to be heard than seen").

In Litchfield County, Conn., the Blue-headed Vireo is less rare in summer than elsewhere near New York. It was not, however, until June 29, 1933, that we again heard the "nuthatch note." That morning three vireos were singing in the Cornwall Pines and young were about. Approaching one bird quite closely, its song suddenly ceased and presently—with the bird in plain sight—we heard the "nuthatch note." It may have been an alarm note. Its resemblance to the call of a Nuthatch—particularly to that of a Red-breasted Nuthatch—was striking.

The ordinary pattern of the song of the Blue-headed Vireo may be said to be a phrase followed by a pause. But these Cornwall birds more than once launched into a continuous warble of phrase after phrase, entirely skipping the pause, the effect of which was extremely pleasing. This song is evidently quite well-known, though I do not recall having heard it previously near New York.

The scene again reverts to Putnam County—to a section east of Cold Spring, high, wet and with tall Hemlocks. Though it is early June, the song of a Blue-headed Vireo is entirely in keeping with the surroundings. But between phrases of Blue-head song, we (same observers as above, June 10, 1931) were somewhat amazed to catch the "chip-churr-chip" of what would anywhere be passed up for a White-eyed Vireo—anywhere but here where the latter species seemed off location in spite of more or less notorious admixture in the same places of species of southern and northern association. The song of the White-eye, curiously, exactly coincided with the pause interval of the Blue-head. We finally located the Blue-head, and as he perched out in plain sight on a dead twig, we had ample

opportunity to observe him in the act of singing his own song and in the intervals between phrases executing—to our ears at least—a perfect rendition of the song of the White-eye.—JOHN F. KUERZI.

The Purple Martin - - A Correction—Owing to an unfortunate misunderstanding, the Purple Martin is recorded April 5, 1928, from the Bronx Region, N. Y. (Abst. Proc. Linn. Soc., No. 41-42, page 30; cited page 10). As a matter of fact this date of April 5 was secured in 1921 and represents, not the arrival of the species in 1928, but its earliest appearance in spring at the Manursing Island, Rye, N. Y., colony during about ten years of observation. By another unhappy error in transcription, the observation is not fully accredited. The birds were not seen by Messrs. Herbert, Kassoy and Kuerzi but were reported to them by Mr. Michael Oboiko, who superintends the Browning estate on which the birds nest.

Mr. Oboiko has called our attention to a rather interesting fact with respect to the arrival of Martins in spring. Incoming birds seem to arrive at a tremendous elevation and after reaching their goal, drop down. Their flight is at such height that the birds might be easily overlooked unless one were paying very close attention. It seems possible that this fact may account for the almost total lack of observations of migrating birds of this species from localities like Central and Bronx Parks which are more or less to the south of a large nesting colony.—JOHN F. KUERZI.

A Bird-catching Insect—Familiarity on our part with encounters between birds and insects, in which the insects are generally eaten makes it difficult for us to realize that there are insects in this region capable of capturing and attempting to eat birds. Such things may happen as the experience of Mr. Harold V. Depuy of Princess Bay, Staten Island, shows. In late August, 1931, a Butterfly Bush (*Buddleia*) was in full bloom in his yard and was an attraction for many butterflies and also for hummingbirds. The Praying Mantis, an insect which has been increasing in abundance in this region recently, has discovered that butterflies are easy to catch at Butterfly Bushes, and several could generally be seen in the bush. Butterfly wings on the ground indicated that many were caught and eaten. One day a slight commotion under the bush attracted the attention of Mr. Depuy, who walked to the spot and found that a large Mantis was holding a Ruby-throated Hummingbird. The Mantis had one of the bird's wings pinned to the ground and was biting at its breast feathers. The fluttering of the bird's free wing had attracted attention. The insect, when prodded with a stick, released the bird. After remaining motionless for a short period the bird suddenly darted away probably uninjured.—JAMES L. EDWARDS.

Young Wood Ducks Use Wings Under Water—On a trip to Troy Meadows, New Jersey, in July, 1930, I surprised a family of Wood Ducks in a ditch along the old abandoned road. The old birds flew off leaving five or six half grown young to escape by other means. I had reached a point about thirty feet from the end of the ditch and was between them and the larger stream, into which the ditch emptied, when the ducks became alarmed. Instead of leaving the water and climbing over the low bank to the marsh beyond where escape

would have been easy the young birds swam to the end of the ditch and disappeared under the surface as I approached. At first I could not see where they went as the water, although only a few inches deep and not more than four feet wide, was so discolored that it was difficult to see beneath the surface at any distance. On glancing back along the ditch I noticed a slight ripple indicating that something was swimming underneath. By running along the bank I overtook the swimmer and saw that it was one of the young ducks. The bird used its wings taking rather deliberate strokes and made steady progress in a nearly straight line. As I watched, the rest of the young birds swam past in the same manner but some of them kept so near the bottom that only the ripple on the surface revealed their position. In spite of the discoloration of the water which must have made vision underneath practically impossible the birds followed the course of the ditch towards the deeper water in a way that indicated a remarkable sense of direction. It seems peculiar that these birds should have chosen a method of escape that required that they pass very close to the enemy instead of scattering into the dense marsh vegetation so near at hand.—JAMES L. EDWARDS.

Yellow-headed Blackbird (*Xanthocephalus Xanthocephalus*) At The Jones Beach Bird Sanctuary—Revisiting the Sanctuary on Sept. 1st, 1932 together with a companion, we had about concluded our observations of the rather scanty assemblage dotting the pond, when our attention was attracted to a black bird slowly weaving his way about at the edge of the grasses.

This was at the eastern end of the pond on the ocean side and about 5 P. M. (daylight saving time). The day was warm and sunny, with little wind stirring and the bird so intent in his search for food as to be practically oblivious of our presence.

Having mistaken the bird for a grackle, the illusion was of an all black bird as seen from the rear, we approached to within 10 feet, when suddenly the bird wheeled about disclosing a most vivid orange throat and breast! We spent about an hour watching its behavior and deliberately sought to disturb it, whereupon he flew a short distance to rest upon some weed tops, uttering but one hoarse croak. While in this position he repeatedly extended a wing, displaying to advantage the definite white patch. At intervals we had excellent opportunity clearly to note a semblance of yellow feathers showing faintly through the black of the head and nape, at the same time the small region before the eye was definitely outlined black.

Apparently the bird was alone and in good condition, my impression being that the bird was extremely hungry. It proved to be an adult male in the post-nuptial plumage.—HELENE LUNT.

A Dovekie Return—On the afternoon of January 12, 1934, a State Park truck driver telephoned from the Jones Beach storehouse that a strange "little duck" had flown into his truck between the storehouse and the State Troopers' barracks. The bird was sent for and, as had been indicated by his description, proved to be a Dovekie (*Alle alle*). Although it was thin enough for its sternum to be easily perceptible to the touch, it was in better condition than were most of those the writer handled during the 1932 invasion. Its feathers were, however, badly oil-soaked, and a bath seemed to be indicated. Ivory Flakes have re-

habilitated other oiled birds at the Sanctuary, and the Dovekie presented no difficulties except for its persistence in drinking suds. The writer held its bill in the air, while his wife wielded suds, a soft brush, numerous changes of water, and a warmed towel. An hour on top of the hot water boiler completely dried out the feathers and, because of the difficulty of securing suitable food for convalescing Dovekies, it was deemed expedient to release it at once, after it had been banded.

The bird scuttled vigorously into the surf, dove through the breakers, repeatedly preened itself, and flapped its wings strongly.

When a Black-backed Gull (*Larus marinus*) plunged at it, the Dovekie flipped itself beneath the surface. After a couple of dozen tries the gull abandoned the effort. Meanwhile, however, eight or ten other gulls, Black-backs and Herring Gulls (*L. a. smithsonianus*), had been attracted to the potential meal. The Dovekie drifted westward, until glasses were necessary to pick it out, and the gulls repeatedly swooped toward it. Suddenly, after perhaps five minutes, we saw a young Black-back thrust itself upward from the waves with the auk in its bill. It dropped its prey once, caught it as it reached the surface of the smooth sea, and flew off with the other gulls in close pursuit. A couple of hundred yards off-shore we could see the gulls fighting over something, and when, through the glasses, we saw them tearing a small, dark object, we felt that we might, with a reasonable degree of certainty, add to the few in the files of the Biological Survey another "return" record for *Alle alle*.—WILLIAM VOGT, *Jones Beach State Bird Sanctuary*.

An Observation of the Mating Habits of the Yellow-billed Cuckoo—At 5:30 on the evening of May 24, 1933, I was strolling along the Albany Post Road in North Yonkers when I saw a Yellow-billed Cuckoo fly across the road and alight about twenty feet above the ground in a giant elm tree. I trained my binoculars on the bird and was enjoying an excellent view of this creature of peculiar movements and stranger habits when I perceived another Cuckoo, which proved to be a male, fly into the field of my glasses and alight along side of the first. He held in his bill a hairless, green caterpillar about an inch in length. The first bird, a female, immediately began a rhythmic motion: with head held high and bill pointing upward she squatted on the limb and raised her long tail almost vertically in the air, going through this motion six or seven times. The tail motion itself consisted of a pause with the tail held vertically followed by a quick spasmodic wag carrying the tail clear down and then back to the vertical without interruption of the motion. Upon completion of six or seven such wags the male mounted and copulation took place. The process took a surprisingly long time, estimated at between twenty and twenty-five seconds, toward the end of which time the female slowly turned her head around to the left, took the caterpillar from the bill of the male and gulped it down. This seemed to be the final act of the process as the male resumed his position on the limb and, after a look to right and left, flew away across an adjacent field. The female then left the elm tree and flew across the road to a small apple tree to which I followed and arrived just in time to see the male join her and the whole process repeated, every detail being substantially the same even to the description of the caterpillar. Both birds then made off across the field and were lost to view.

These two acts took place within a period of about five minutes and were observed in good light with strong glasses from distances of about twenty-five and forty feet, respectively.

I took down in my note book at once a detailed description of this unique performance. A cursory examination of previously published writings on the life histories of the North American cuckoos revealed no similar observations, but I have been told that a similar mating ceremony has been described for some tropical cuckoos (*Centropus*, etc.).—ALLEN M. THOMAS.

The Ornithological Year 1930 in the New York City Region

BY T. DONALD CARTER

The mild period that ushered in the New Year was of scant duration for a two weeks' cold-snap in the latter part of the month froze up the fresh water ponds but brought very little snow. During the first two weeks of January ducks were remarkably numerous in the fresh water ponds, but the freezing of the water in the middle of the month drove them to parts unknown.

As in the preceding year a few shore-birds remained until the middle of January. In the Barnegat region, Red-backed Sandpipers, Semipalmated Sandpipers, and Black-bellied Plovers were reported on January 12.

The Evening and Pine Grosbeaks, first reported during the early part of the winter, remained throughout the month and well into February.

The unseasonably mild weather of late February had no appreciable, immediate effect upon the arrival of early migrants, with one notable exception—the early occurrence of the Phoebe at Ridgewood, N. J., on February 22. A movement of Grackles was first noted on February 24 and of Fox Sparrows on February 27.

Ducks, although perhaps not found in as large numbers as in some springs, were well represented. Three Shovellers and a Redhead were observed at Troy Meadows on March 30 (Edwards), the latter the first record for that region.

A remarkable flight of Loons was witnessed by Eaton. Over eighty were observed flying over Montclair during the last weeks in April.

Although the mild weather extended throughout March, the migration was late and it was not until after the middle of April that it reached normal. The first large waves of May were a bit early, reaching the peak about May 10.

Central Park had no great flight of birds as sometimes occurs, the best days being May 8-9. All the warblers that might be expected to be found were observed, thirty-two in all, including such rarities as the Orange-crowned, Cerulean, and Mourning.

Mr. Charles Urner and ten others took the usual spring census. The territory covered extended from Boonton and Troy Meadows to Brigantine. One hundred and fifty species were noted.

Two interesting breeding records were reported. Several pairs of Blue-winged Teal bred at Troy Meadows (Walsh, Edwards, Urner and Carter), and Willet were found nesting in southern New Jersey by J. K. Potter.

The Bronx County Bird Club made a breeding bird census of Orange County, New York, and discovered the following: Upland Plover, 11, in four places; Great Blue Heron, 3; Turkey Vulture, 3; Purple Finch, 1 singing; Parula Warbler, 2; Black-throated Blue Warbler, 4; Magnolia Warbler, 2; Canadian Warbler, 3; Blackburnian Warbler, 2; Short-billed Marsh Wren, abundant locally; Tufted Titmouse (1 pair feeding brood) three miles north of Goshen, N. Y.

In New Jersey Edwards, Kuerzi and Urner made a breeding census of swamps on Mountain Lake and near Alamuche Lake and Mountain. They found Pileated Woodpecker, 2; Red-headed Woodpecker, 2; Henslow's Sparrow, 16; Cliff Swallow, 22 nests on barn south of Mountain Lake; Tree Swallow, 8; Warbling Vireo, 3; Yellow-breasted Chat, 16.

The fall was mild with no freeze until after the middle of October. Among the interesting fall migrants to visit Central Park were Orange-crowned Warbler, August 22; Philadelphia Vireo; Yellow-crowned Night Heron, September 2 (Watson), and Wilson's Snipe, October 26 (Gutlohn).

Other interesting migrants were twenty-five Forster's Terns, Mecox Bay, October 2-20 (Wilcox); 3 Wilson's Plovers very satisfactorily observed, Jones Beach (Rich); European Widgeon, Red-heads and Canvas-backs, Boonton Reservoir, October 19 (Walsh), the largest number of Whistling Swans in years at Barnegat, the main flight passing through on November 8-9 (Urner). Mr. Urner also reported on the large flight of Canada Geese at Barnegat and that loons were migrating all the afternoon there. Two Snow Geese, Barnegat, November 30 (Walsh); 4 Hooded Mergansers at Boonton, December 7 (Walsh), are late. An Arkansas Kingbird, Papeague, L. I., was seen November 9 (Whitaker); a Catbird, Oradell, N. J., November 24 (Bowdish), and a Carolina Wren, Dyker Heights, November 3 (Johnson).

Some of the winter records include a Snowy Owl, Long Beach, December 6 (Johnston); Prairie Horned Lark, Long Beach, December 6 (Johnston); 3 Ravens, Barnegat (Urner).

The Christmas census on December 21, again proved the Bronx County Bird Club keen observers. Working in four separate groups they amassed a total of 85 species and 9,343 individuals. However, 12 of the species were seen outside the 15-mile limit. A second party composed of many of the members of the Society, covered the territory from Montclair to Elizabeth and totaled 52 species and about 6,273 individuals. A third party of four in the Barnegat region found 76 species and about 22,478 individuals within the 15-mile diameter. Land birds in the Barnegat area seemed unusually numerous, and a very large crop of berries on the various berry-bearing shrubs and trees was a possible explanation.

During the summer, numerous members of the Society took ornithological trips farther afield. Messrs. J. and R. Kuerzi, Kassoy, Herbert, Barry and Carter had a two weeks' trip to the Gaspé Peninsula, early in July, visiting Bonaventure Island and other points along or near the coast, including a trip to the summit of Table-top Mountain, in the Gaspé State Park. They found a general increase in the breeding birds of Bonaventure Island since the time of Mr. Chubb's recent visit; for example, the breeding Gannets were estimated by Mr. Chubb at 10,000, though at present a count of 13,000 would seem to be conservative. Other items of interest were: White-winged Cross-bill, abundant; Pine Grosbeak, singing; American Three-toed Woodpecker. Horned Larks and Pipits were found on the summit of Table-top; the former was also seen at sea level. Brown-capped Chickadee, common; Tennessee Warbler, one of the commonest warblers.

Mr. Edwards visited Cobb's Island, Va., during the later part of June. He reported a generally marked decrease in the numbers of breeding terns and shore-birds, though the number of Skimmers appeared to remain more or less constant. He also stated that "illegal gunning and egging are rife" on the island at the present time, a deplorable condition, perhaps due to some extent to the temporary absence of the Federal Warden.

Gavia immer immer. Common Loon.—Flight of about 80 between April 19 and May 9, Upper Montclair (Eaton).

Colymbus grisegena holboelli. Holboell's Grebe.—Rhinebeck, Jan. 28, and Feb. 9 (Crosby).

Colymbus auritus. Horned Grebe.—Boonton, N. J., Nov. 4 (Johnson).

Podilymbus podiceps podiceps. Pied-billed Grebe.—Fort Salonga, L. I., July 22 (Mrs. Fry); Barnegat, Dec. 14 (Edwards and Urner).

Puffinus griseus. Sooty Shearwater.—Jones' Beach, L. I., July 4 (Barry, Kassoy).

Moris bassana. Gannet.—Flight, Long Beach, L. I., Oct. 19 (Janvrin); heavy migration, Nov. 2 (Walsh); 1 immature, Barnegat, N. J., Nov. 30 (Walsh); Newark Bay, Oct. 1 (Urner).

Ardea herodias herodias. Great Blue Heron.—3, Orange County, N. Y., June 22 (Kassoy, J. and R. Kuerzi).

Casmerodius albus egretta. American Egret.—6, Oakwood Beach, S. I., July 29; 3, Aug. 2 (Johnston); 2, Fort Salonga, L. I., July 30 (Mrs. Fry); 41, Newark Meadows, Aug. 16 (Urner).

Egretta thula thula. Snowy Heron.—Port Newark, N. J., July 31 (Urner); Aug. 2 (Eaton); Barnegat Inlet, Sept. 14 (Urner); 6, Troy Meadows, Aug. 23 (Kuerzi and Urner).

Hydranassa tricolor ruficollis. Louisiana Heron.—Oakwood Beach, Aug. 2 (Johnston); 1, Newark Meadow, Aug. 13 (Urner).

Florida caerulea caerulea. Little Blue Heron.—10, Northport, L. I., Aug. 3 (Miss Ingraham); 239, Newark, N. J., marshes, Sept. 3 (Urner); maximum of 500 at Barnegat in August (Eayre).

Nyctanassa violacea violacea. Yellow-crowned Night Heron.—Troy Meadows, N. J., May 18 (Walsh); Van Cortlandt Park, N. Y., May 25 (Kuerzi); Central Park, Sept. 2 (Watson).

Ixobrychus exilis exilis. Eastern Least Bittern.—3, Van Cortlandt Park, May 10 (Cruickshank); Dyker Heights, May 13 (Eaton).

Cygnus columbianus. Whistling Swan.—Largest flight in years, main flight, Nov. 8-9, Barnegat, N. J. (Urner).

Chen hyperborea Sp. Snow Goose.—Barnegat, Nov. 30 (Walsh).

Dendrocygna autumnalis autumnalis. Black-bellied Tree-duck.—Probably an escape, Northport, Aug. 19 (Ingraham).

Anas platyrhynchos platyrhynchos. Common Mallard.—Dutchess County, May 25 (Crosby); Boonton, N. J., Nov. 4 (Johnson); 4, Hempstead Reservoir, L. I., Dec. 5 and 10 (Matuszewski).

Mareca penelope. European Widgeon.—Boonton, Oct. 19 (Walsh).

Mareca americana. Baldpate. — Hempstead Reservoir, Dec. 5 and 10 (Matuszewski).

Nettion carolinense. Green-winged Teal.—Jerome Reservoir, March 31 (Cruickshank); Troy Meadows, May 25 (Edwards).

Querquedula discors. Blue-winged Teal.—Jones' Beach, April 6 (Janvrin); Troy Meadows, May 25 (Edwards).

Spatula clypeata. Shoveller.—3, Troy Meadows, March 30 (Edwards); Brookhaven, April 17 (Kuerzi); 2, Troy Meadows, May 18 (Urner); Speonk, Sept. 20; Shinnecock Bay, Sept. 25 (Wilcox).

Aix sponsa. Wood Duck.—Fort Salonga, L. I., July 22 (Mrs. Fry); 4, Bronx Region, Nov. 4 (Cruickshank).

Nyroca americana. Redhead.—Troy Meadows, Mar. 30 (Edwards); Boonton, Oct. 19 (Walsh).

Nyroca collaris. Ring-necked Duck.—2, Kensico Reservoir, March 4 (K. Kuerzi); 4, Jerome Reservoir, March 30, April 1 (Carter); 2, Dutchess County, N. Y., April 6 (Crosby); Van Cortlandt Park, April 12 (Cruickshank); 4, Brookhaven, L. I., April 27 (Kuerzi); Speonk, Oct. 20 (Wilcox); Hempstead Reservoir, Dec. 5 (Matuszewski).

Nyroca valisineria. Canvas-back.—Boonton, Oct. 19 (Walsh).

Nyroca affinis. Lesser Scaup Duck.—Croton Point, Jan. 11 (Herbert, Kassoy, Kuerzi).

Clangula hyemalis. Old-squaw.—6, Long Beach, L. I., Oct. 19 (Janvrin); Dec. 6 (Johnston); Boonton, Dec. 7 (Walsh).

Erismatura jamaicensis rubida. Ruddy Duck.—Dutchess County, Mar. 23, April 6 (Crosby); Fort Salonga, L. I., July 30 (Mrs. Fry); 14, Boonton, Nov. 14 (Johnson).

Lophodytes cucullatus. Hooded Merganser.—Brookhaven, L. I., April 27 (Kuerzi); Edgewater, N. J., Oct. 19 (L. N. Nichols); Bronx Region, Nov. 4 (Cruickshank); Wampus Lake, Nov. 8 (J. and R. Kuerzi); Boonton, Nov. 9, Dec. 7 (Walsh); Kensico Reservoir, Nov. 23 (J. and R. Kuerzi).

Mergus merganser americanus. American Merganser.—Central Park, Nov. 10 (Cruickshank).

Mergus serrator. Red-breasted Merganser.—Over 1,000, Jones' Beach, April 6 (Janvrin); Amagansett, Aug. 14 (E. G. Nichols).

Cathartes aura septentrionalis. Turkey Vulture.—3, Orange County, N. Y. (Kassoy, J. and R. Kuerzi).

Coragyps atratus atratus. Black Vulture.—New Egypt, N. J., May 22 (Urner).

Astur atricapillus atricapillus. Eastern Goshawk.—Dutchess County, N. Y., May 3 (Crosby).

Buteo platypterus platypterus. Broad-winged Hawk.—Van Cortlandt Park, April 24 (Cruickshank).

Pandion haliaetus carolinensis. Osprey.—Central Park, April 15 (Cruickshank).

Falco columbarius columbarius. Eastern Pigeon Hawk.—Montauk, L. I., Jan. 4 (Walsh); Dyker Heights, Oct. 25 (Johnston).

Colinus virginianus virginianus. Eastern Bob-white.—Dyker Heights, Nov. 3 and 8 (Johnston).

Rallus elegans elegans. King Rail.—Van Cortlandt Park, May 10 (Cruikshank); Barnegat region, Aug. 24 (Urner and Kuerzi).

Rallus limicola limicola. Virginia Rail.—Troy Meadows, N. J., April 1 (J. Thompson).

Porzana carolina. Sora.—Orange County, June 22 (Kassoy, J. and R. Kuerzi).

Coturnicops noveboracensis. Yellow Rail.—Remains picked up at Mastic, L. I., Mar. 30 (J. T. Nichols). Though badly eaten the rail had not long been dead.

Gallinula chloropus cachinnans. Florida Gallinule.—Van Cortlandt Park, April 12 (Cruikshank); Dyker Heights, May 13 (Eaton).

Fulica americana americana. American Coot.—80, Boonton, Nov. 1 (Rich).

Charadrius semipalmatus. Semipalmated Plover.—3, Kitchawan, Nov. 2 (Vogt).

Oxyechus vociferus vociferus. Killdeer.—40, Boonton, N. J., Sept. 9 (Rich); Dyker Heights, Nov. 2 (Hix).

Pluvialis dominica dominica. American Golden Plover.—Oakwood Beach, S. I., Sept. 4 (Johnston); large flight Newark Meadows, 150 on Sept. 27 (Urner).

Squatarola squatarola. Black-bellied Plover.—Barnegat, N. J., Jan 12 (Kassoy, Kuerzi); Dyker Heights, May 9 (Eaton); Barnegat, Nov. 2 (Walsh).

Capella delicata. Wilson's Snipe.—Bernardsville, May 16 (Kuser); Central Park, Oct. 26 (Guthohn); Springfield, N. J., Mar. 30, seen ejecting pellet of crawfish remains (Urner).

Phaeopus hudsonicus. Hudsonian Curlew. — Oakwood Beach, July 29 (Johnston).

Bartramia longicauda. Upland Plover.—2, Lamington, N. J., May 2 and 6 (Kuser); 11, in four separate places in Orange County, N. Y., June 22 (Kassoy, J. and R. Kuerzi); 1, Orient, July 23 (Mrs. Fry).

Catoptrophorus semipalmatus semipalmatus. Eastern Willet.—Long Beach, L. I., July 31 (Johnston).

Totanus melanoleucus. Greater Yellow-legs.—Troy Meadows, Mar. 29 (Edwards); Bernardsville, May 27 (Kuser).

Totanus flavipes. Lesser Yellow-legs.—Troy Meadows, March 29 (Edwards); May 18 (Urner); Dutchess County, N. Y., May 18 (Crosby); Boonton, N. J., Nov. 9 (Walsh).

Arquatella maritima. Purple Sandpiper.—Beach Haven, N. J., Jan. 26 (Walsh).

Pisobia melanota. Pectoral Sandpiper.—Dyker Heights, Oct. 22 (Johnston); Nov. 2 (Hix); Nov. 11 (Johnson).

Pelidna alpina sakhalina. Red-backed Sandpiper.—150, Barnegat, N. J., Jan. 12 (Kassoy, Kuerzi); Long Beach, June 19 (Johnston and Watson); 100, Barnegat, Nov. 2 (Walsh); 3, Boonton, N. J., Nov. 9 (Walsh); Dyker Heights, Nov. 6 (Hix); 25, Barnegat, Nov. 30 (Walsh).

Limnodromus griseus griseus. Eastern Dowitcher.—10, Long Beach, June 19 and 28 (Johnston).

Ereunetes pusillus. Semipalmated Sandpiper.—Barnegat, Jan. 12 (Kassoy, Kuerzi); Dyker Heights, Oct. 22 (Johnson); Boonton, N. J., Nov. 9 (Walsh).

Ereunetes mauri. Western Sandpiper.—Long Beach, L. I., Aug. 30 (Johnston); Barnegat, N. J., Nov. 2 (Walsh).

Limosa haemastica. Hudsonian Godwit.—2, East Point, L. I., Aug. 5 (L. N. Nichols).

Steganopus tricolor. Wilson's Phalarope.—Long Beach, L. I., June 19 (Watson and Johnston); 2, Newark Meadows, Sept. 1 (Urner).

Stercorarius parasiticus. Parasitic Jaeger.—Barnegat, Sept. 7 (Coolidge and Urner).

Larus hyperboreus. Glaucous Gull.—1, Hunt's Point, Dec. 7 (Herbert).

Larus delawarensis. Ring-billed Gull.—Dyker Heights, Oct. 22 (Johnson).

Larus atricilla. Laughing Gull.—Brooklyn water-front, Nov. 9 (Hix).

Rissa tridactyla tridactyla. Atlantic Kittiwake.—3, Oyster Bay, Nov. 28 (Matuszewski).

Sterna forsteri. Forster's Tern.—Oakwood Beach, Aug. 4 (Charles Johnston); 25, Mecox Bay, L. I., Oct. 2, 20 (Wilcox); 2, Barnegat region, Nov. 9 (Urner); 8, Newark Bay, Nov. 2 (Urner).

Sterna hirundo hirundo. Common Tern.—4, Bernardsville, N. J., May 20 (Kuser).

Sterna dougalli dougalli. Roseate Tern.—3, Jones' Beach, July 24 (L. N. Nichols); 4, Oakwood Beach, S. I., Aug. 4 (Charles Johnston); 1, Dyker Heights, Aug. 17 (Hix).

Sterna antillarum antillarum. Least Tern.—Oakwood Beach, S. I., June 5 (Charles Johnston); Bay Pond, Newark Meadows, July 20, first Union Co. record (Edwards).

Hydroprogne caspia imperator. Caspian Tern.—5, East Hampton, L. I., Sept. 12 (Helmuth); 3, Shark River, Sept. 28, one feeding young (Edwards and Urner).

Chlidonias nigra surinamensis. Black Tern.—Port Newark, May 25 (Edwards).

Cephalus grylle grylle. Black Guillemot.—Montauk, Oct. 26 (Whitaker).

Tyto alba pratincola. Barn Owl.—Bernardsville, N. J., May 21 (Kuser); Hunt's Point, Dec. 8 (Kassoy).

Bubo virginianus virginianus. Great Horned Owl.—65 reported taken at State Game Farm, Forked River, N. J., during February and March, 1929 (Urner); Bronx Park, March 28 (Hickey).

Nyctea nyctea. Snowy Owl.—Long Beach, L. I., Dec. 6 (Johnston).

Asio wilsonianus. Long-eared Owl.—Forked River, N. J., Jan. 12 (Urner, Eaton and Walsh).

Asio flammeus flammeus. Short-eared Owl.—Troy Meadows, March 30 (Edwards); Dyker Heights, Oct. 22 (Charles Johnston).

Cryptoglaux acadica acadica. Saw-whet Owl.—Rhinebeck, N. Y., Jan. 21 (Crosby); Troy Meadows, N. J., March 29 (Edwards).

Centurus carolinus. Red-bellied Woodpecker.—Manasquan River, N. J., Aug. 31 (Urner).

Melanerpes erythrocephalus. Red-headed Woodpecker.—Bronx Park, May 13 (Cruickshank).

Tyrannus dominicensis dominicensis. Gray Kingbird.—Jones' Beach, June 7 (Hix); Dyker Heights, Aug. 22 (Johnston).

Tyrannus verticalis. Arkansas Kingbird.—Papeague, L. I., Nov. 9 (Whitaker).

Sayornis phoebe. Eastern Phoebe.—Ridgewood, N. J., Feb. 22 (Walsh); Van Cortland Park, Nov. 23 (Cruickshank).

Nuttallornis mesoleucus. Olive-sided Flycatcher.—Dyker Heights, Aug. 17 (Eaton); Aug. 22 (Johnston).

Otocoris alpestris praticola. Prairie Horned Lark.—Dutchess County, N. Y., March 31, nest, 3 young, 3 days old. April 6, another nest, 3 young (Crosby); 2, Van Cortlandt Park, Nov. 9 (Chubb, Herbert, Kassoy, Kuerzi); Long Beach, L. I., Dec. 6 (Johnston); Barnegat region. Dec. 28 (Urner).

Iridoprocne bicolor. Tree Swallow.—Montauk, Nov. 9 (Whitaker); Tod's Neck, Nov. 30 (Vogt).

Corvus corax principalis. Northern Raven.—Barnegat, N. J., Feb. 9, Dec. 7 (Urner).

Bacolophus bicolor. Tufted Titmouse.—Three miles north of Goshen, N. Y., June 22, pair feeding young (Kassoy, J. and R. Kuerzi).

Sitta canadensis. Red-breasted Nuthatch.—Dutchess County, N. Y., May 4 (Crosby).

Nannus hiemalis hiemalis. Eastern Winter Wren.—Bernardsville, N. J., May 16 (Kuser).

Thryothorus ludovicianus ludovicianus. Carolina Wren.—Dutchess County, May 24-25 (Crosby); Inwood, Aug. 12 (Eaton); Dyker Heights, Aug. 17 (Hix).

Telmatodytes palustris palustris. Long-billed Marsh Wren.—Englewood, Nov. 1 (Nichols); Croton Point, Jan. 11 (Kuerzi and Peterson).

Cistothorus stellaris. Short-billed Marsh Wren.—Orange County, N. Y., June 22, abundant locally (Kassoy, J. and R. Kuerzi).

Mimus polyglottos polyglottos. Eastern Mockingbird.—Montclair, N. J., Jan. 9, 13 (Mrs. C. Hegeman); Barnegat, Dec. 21 (Walsh and Nichols).

Dumetella carolinensis. Catbird.—Bronx Botanical Gardens, Nov. 22 (Johnston); Oradell, N. J., Nov. 24 (Bowdish).

Toxostoma rufum. Brown Thrasher.—Bronx Park, reported by various observers throughout winter.

Turdus migratorius migratorius. Eastern Robin.—30, Bronx Botanical Gardens, Nov. 27 (Johnston).

Hylocichla mustelina. Wood Thrush.—City Hall Park, Aug. 1 (Eaton).

Hylocichla guttata faxoni. Eastern Hermit Thrush.—Englewood, N. J., Oct. 19 (L. N. Nichols).

Corthylio calendula calendula. Eastern Ruby-crowned Kinglet.—Kensico Reservoir, Jan. 26 (Kassoy, Herbert and Peterson).

Anthus spinoletta rubescens. American Pipit.—Bernardsville, May 20 (Kuser).

Lanius borealis borealis. Northern Shrike.—2, Demarest, Nov. 11 (Bowdish); Pelham Park, Nov. 23 (Hix).

Lanius ludovicianus migrans. Migrant Shrike.—Pine Brook, N. J., March 30 (Edwards); Van Cortlandt Park, April 12 (Cruickshank).

Vireo solitarius solitarius. Blue-headed Vireo.—Nest building along Dunnfield Creek, N. J., July 20 and July 27 (Urner).

Vireo philadelphicus. Philadelphia Vireo.—Troy Meadows, May 17 (Edwards); Central Park, Aug. 29, Sept 9, 12 (Carter, Watson, et al.)

Vermivora lawrencei. Lawrence's Warbler.—Boonton, N. J., May 4 (Carter).

Vermivora celata celata. Orange-crowned Warbler.—Central Park, Aug. 22 (Carter and Watson).

Compsothlypis americana pusilla. Northern Parula Warbler.—Orange County, N. Y., June 22 (Kassoy, J. and R. Kuerzi).

Dendroica magnolia. Magnolia Warbler.—1 singing, Orange County, N. Y., June 22 (Kassoy, J. and R. Kuerzi).

Dendroica caerulescens caerulescens. Black-throated Blue Warbler.—4, Orange County, N. Y., June 22 (Kassoy, J. and R. Kuerzi).

Dendroica cerulea. Cerulean Warbler.—More common than ever in Dutchess County, N. Y. (Crosby).

Dendroica fusca. Blackburnian Warbler.—2, Orange County, N. Y., June 22 (Kassoy, J. and R. Kuerzi).

Dendroica castanea. Bay-breasted Warbler.—7th Ave. and 92nd St., Brooklyn, N. Y., May 10 (Hix).

Dendroica striata. Black-poll Warbler.—Dutchess County, N. Y., May 8 (Crosby).

Dendroica discolor discolor. Northern Prairie Warbler.—Dutchess County, N. Y., May 8 (Crosby).

Dendroica palmarum hypochrysea. Yellow Palm Warbler.—Barnegat, Nov. 2 (Walsh); Brooklyn, Nov. 27 (Hix).

Oporornis formosus. Kentucky Warbler.—7th Ave. and 92nd St., Brooklyn, N. Y., May 10 (Hix).

Oporornis philadelphia. Mourning Warbler.—Bernardsville, N. J., May 5 (Kuser); Van Cortlandt Park, May 23 (Kuerzi).

Wilsonia canadensis. Canada Warbler.—Orange County, N. Y., June 22 (Kassoy, J. and R. Kuerzi).

Dolichonyx oryzivorus. Bobolink.—Bronx Region, Oct. 30 (J. and R. Kuerzi).

Sturnella magna magna. Eastern Meadowlark.—Central Park, Nov. 8 (Morgan).

Molothrus ater ater. Eastern Cowbird.—Bryant Park, Dec. 2 (Johnston); 60, Barnegat Region, Jan. 12 (Eaton, Urner and Walsh); 200 at Broadway and 246th St., New York City, daily to Jan. 28 (Chubb).

Piranga rubra rubra. Summer Tanager.—Central Park, Sept. 10 (Watson).

Richmondia cardinalis cardinalis. Eastern Cardinal.—Amityville, L. I., first seen Jan. 2, and through February and March (Helen S. Ferris); Dutchess County, N. Y., March 24 (Crosby).

Hesperiphona vespertina vespertina. Eastern Evening Grosbeak.—Bernardsville, N. J., Jan. 4 (Kuser); 3, Dutchess County, N. Y., Jan. 5 (Crosby); Essex County Reservation, N. J., Jan. 20 (Urner).

Carpodacus purpureus purpureus. Eastern Purple Finch.—Singing male, Orange County, N. Y., June 22 (Kassoy, and J. and R. Kuerzi); 3, Dyker Heights, Nov. 3 (Johnson).

Pinicola enucleator leucura. Canadian Pine Grosbeak.—45, Essex County Reservation, Jan. 5 (Urner); Boonton, Jan. 26 (Carter); Barnegat Region, Feb. 9 (Urner). Many elsewhere. Notes described as follows by Urner: "(1) Tinkling call, while feeding, not loud; (2) harsh note like that of Starling or Catbird; (3) whistle which reminds of Goldfinch in rhythm—*chic o' rec*, but loud and full. At times only did it remind of a Yellow-legs."

Carduelis carduelis britannica. British Goldfinch.—Lambertville, N. J., May 27 (Elliot).

Spinus pinus pinus. Northern Pine Siskin.—70, Bronx Region, Nov. 4-10 (Kuerzi); Central Park, Nov. 10 (Cruickshank); 50, Bronx Botanical Gardens; 30, Feb. 2, Nov. 22 (Johnston).

Loxia curvirostra pusilla. Red Crossbill.—Poughkeepsie, N. Y., Jan. 19 (Frost); 8, Bronx Park, March 22 (Kuerzi); Waretown, N. J., March 8 (Kuerzi).

Passerculus princeps. Ipswich Sparrow.—Pelham Bay, April 5 (Johnston); 2, Barnegat, Nov. 2 (Walsh); Bronx Region, Dec. 12 (R. Kuerzi).

Ammospiza caudacuta subvirgata. Acadian Sparrow.—Croton Point, Oct. 12 (Peterson).

Ammospiza caudacuta caudacuta. Sharp-tailed Sparrow.—Dyker Heights, April 10 (Johnston).

Junco aikenii. White-winged Junco.—Taken in bird-banding trap at Rhinebeck, N. Y., Jan. 27, and presented to the Vassar Institute, Poughkeepsie, N. Y.

Spizella passerina passerina. Eastern Chipping Sparrow.—10, Dyker Heights, Nov. 3 (Johnston).

Zonotrichia albicollis. White-throated Sparrow.—2, City Hall Park, Aug. 15 (Eaton).

Melospiza lincolni lincolni. Lincoln's Sparrow.—Riverside Park, April 11 (Vogt); Washington Square, May 6 (Johnston).

Calcarius lapponicus lapponicus. Lapland Longspur.—Bernardsville, N. J., April 5 (Kuser); East Moriches, Oct. 14 (Wilcox); Union County, N. J., Dec. 22 (Urner and Carter).

Plectrophenax nivalis nivalis. Eastern Snow Bunting.—Flock of 150 west of Boonton, Jan. 26 (Urner).

The Ornithological Year 1931 in the New York City Region

BY WILLIAM VOGT

The year 1931 follows so closely the even tenor of ornithological ways that, in view of the thorough accounts published in recent *Abstracts* of the Society, extended treatment would seem a work of supererogation. So much field work of the census-by-motor sort has been carried on in the New York City region, and most sections have been so thoroughly and accurately covered, that the law of diminishing returns has begun to demonstrate its cumulative force; in the words of one of the Society's members, this type of field work indicates "that you may find any species anywhere at any time." Many of the rarities that lend so much color and excitement to the sport of birding are virtually without significance.

An account of the ornithological year is dependent upon the co-operation of the many observers who are afield day by day; when observations are largely repetitious, their sum total must be repetitious. Therefore, until a new type of field work is more generally followed, year-by-year ornithological reports can add but little to the admirable papers of Messrs. Griscom, Eaton and J. F. Kuerzi. When other types of field research are pursued, such as the breeding bird censuses in Putnam County, they are usually—and properly—digested and reported in individual papers. Thus, a Secretary succeeding such expert and inveterate local students as the three named above can not but question the importance of an exhaustive account of an ornithological year.

Furthermore, *Bird-Lore* "Season" accounts rarely miss any phenomenon of significant interest in the New York City region. Casuals and accidentals nearly always find a listing in *The Auk*. To which may be added the exhaustive accounts so ably prepared, and published, in *The Heron*, by the Woodmere Academy Bird Club under the direction of Mr. David Harrower.

Perhaps, as an aid to those who, in the future, wish to reconstruct, for their own purposes, the field year 1931, certain pertinent meteorological facts may properly be included here; and field notes otherwise hidden in the often-inaccessible minutes of the Society may prove useful. The writer feels that in consideration of the situation above outlined, apologies are not necessary for presenting this year's history in a much shorter form than that used by his predecessors.

January, with a mean temperature of 33.2° F., was 2.3° above normal. From the 1st to the 14th, from the 16th to the 21st, and from the 23rd to the 31st, the daily maxima were above freezing with a high of 55° on the 27th. On ten days the minima were well above 32° , though the normal daily minimum for the month is 24° . With the fact that only two days in the month escaped thawing temperatures can probably be correlated the extended stay of many "half-hardy" birds. This month was the fifth January on record to have less than one inch of snow.

Fresh-water ducks, as might have been expected, were present in numbers throughout the month. A Woodcock lingered into January near Mastic (W. S. Dana) and R. T. Clausen reported a House Wren at Smallwood, N. J., on the 3rd of the month.

Snowy Owls were reported in numbers from eastern Long Island (Wilcox). Perhaps the most significant report for the month comes from Mr. C. A. Urner. In view of their subsequent sharp decrease, it is interesting to have his January 11 Barnegat census, showing 13,100 Brant and 6,300 Scaup. (See *Bird-Lore*, XXXIII, No. 2, p. 128.)

February, again, had a mean temperature above normal— 2.8° . Although snow covered the ground on eight days, it was 6.2 inches below normal. Considering the mildness of the weather, Mr. J. T. Nichols' comments on the migration are fruitful: "The writer's impression of returning birds . . . is that in the main they came somewhat behind schedule. This may be explained by supposing that the movement of early species is more or less dependent on 'warm spells,' which were lacking, or it may be attributed to cold weather, which seems to have predominated in the South."

March, exceeding normal temperatures to the same extent as February, and filling reservoirs that had been giving municipal authorities much concern, had a killing frost on the 14th—the last for the spring, and the earliest on record. Ornithologically the month was not unusual except, possibly, for the Turkey Vulture records at Bear Mountain, March 15 (Yeaton); Bedford Hills, March 27 (Coolidge); and Scarsdale, March 29 (Phillips).

April was again a month of equable temperatures, with a mean of 50.4° — 1° above normal. From the 24th to the 30th, however, the mercury stayed below normal with frosts on the 28th and 30th.

A sharp storm on the 2nd may explain the presence, on Long Island, of a Little Blue Heron on April 5 (Wilcox) and April 11 (Helmuth), as well as of a Kingbird, April 4 (Wilcox).

In May, the thermometer did not reach 70° until the 9th and 10th; the maxima on the 12th, 13th and 14th were 54°, 52° and 53°; from then on higher temperatures prevailed, with a maximum of 89° on Memorial Day. Precipitation was .69 in. above normal.

From the Philadelphia region Mr. Julian K. Potter reports (*Bird-Lore*) that, "the great bulk of May migrants passed through from May 15-25—a week to ten days late." Mr. Nichols' correspondents indicated that in the New York City region "the last part of the migration of land birds was abnormal and very disappointing for the majority of observers. Birds were quite generally scarce in species and individuals and, for the most part, decidedly behind time . . . there was but a single wave of transients which rose on May 16th, had its peak on the 17th, and fell away on the 18th and 19th. This wave was presumably the one due about May 10."

One of Mr. Urner's lethal tours of New Jersey showed the intensity of the May 17 wave; on that day he, with ten other observers, recorded a one party list of 163 species.

June, July and August were characterized by abnormal heat that resulted in many prostrations. Precipitation was also abnormal for the first two months, with a falling off to more than 1 inch below normal in August.

Two hundred and twenty-three Willets, that, according to old residents, had been there "as long as they could remember," breeding along 11 miles of marsh near Fortescue, N. Y. (Urner, Edwards and J. Kuerzi), are evidence that there are still things to learn about a region that has been intensively worked for years.

Members of the Society took part, as usual, in the annual Wyano-kie census, an analysis of which is included in this volume.

Our knowledge of the breeding birds of the New York region was still further extended by the Bronx County Bird Club that, during this period, made several exploratory trips into Putnam County.

Mr. Urner's report of at least 20 pairs of breeding Upland Plovers in New Jersey was good news to local conservationists, as were also the many reports of a heavy Dowitcher migration.

Generally speaking, the southern-heron flight was light—probably the result of pre-August rains that tended to disperse the birds over wide feeding areas—though seven Yellow-crowned Night Herons at Newark Bay, August 15 (Urner) is extraordinary. Two adult Little Blue Herons at Jones Beach, June 6 (Rich and Mayr) initiated long searches through the poison ivy, but no evidence that the birds were breeding could be found.

September was hot— 4.4° above normal—and the driest since 1914, with a precipitation deficiency of 2.24 inches. Ornithologically, it was not extraordinary.

In October precipitation was nearly normal but the temperature for the month was 4.1° above normal. Mr. Nichols reports "trees unusually green and full-leaved in mid-October." The first heavy frost came on the 19th.

The early duck migration along the New Jersey Coast was below par (Urner) and the Wood Duck population at Troy Meadows was below that of the preceding year (Edwards). A Bob-white, with downy young, was reported from Long Island, October 12 (Yeaton).

November, 7.3° above normal, was the warmest on record, while the precipitation of 0.61 inch was the lowest.

Perhaps the most notable discovery of the entire autumn was the large numbers of fresh-water ducks on Carman's River, Brookhaven, L. I. Some doubt was cast on the validity of records from this shooting preserve by the assertion of a former employe that the birds were an admixture of ferals and cripples; further investigation, however, showed the statement to be without foundation.

Dr. Janvrin added 17 Whistling Swans to his Long Beach list on the 29th; on the same day, Messrs. Breslau and Sedwitz found the first Snowy Owl of the winter at Jones Beach. A hawk flight was noted on the 8th when a scattering of some 50 birds, mostly Red-shoulders, with a few Red-tails and one Sharpshin, were moving southwestward over Croton Point (J. Kuerzi, Vogt, etc.). Northern finches—Red Crossbills—made their appearance in the region on November 15 and were present at least until December 12 (Cruickshank, Carleton).

December was, again, warm and dry. The clement weather resulted in good fresh-water duck lists on the Christmas censuses, with

half-hardy birds well represented. In spite of the Crossbills noted, northern finches were as scarce on local censuses as they were common in reports from New England. Shrikes and Snowy Owls, according to Mr. Nichols, were generally absent from censuses.

Too early to reach immortality in a Christmas census, 24 Dovekies flew in over the pond at the Jones Beach Bird Sanctuary, on December 24, and one that dropped, and subsequently died, was sent to the American Museum by the caretaker, Robert Franklin.

In closing, the writer wishes to thank Mr. John F. Kuerzi for his criticisms of, and helpful suggestions on, this paper; Mr. Frank Watson, for his day-by-day observations in Central Park; Mr. J. T. Nichols for making available material sent to him as "Season" editor of *Bird-Lore*; and Mr. Charles A. Urner, whose advice and unfailing helpfulness lighten, more than any other factor, the labors of a secretary.

Colymbus grisegena holboelli. Holboell's Grebe.—Bronx Region, Oct. 7 (Cruickshank).

Podilymbus podiceps podiceps. Pied-billed Grebe.—Croton Point, Aug. 9 (Vogt).

Puffinus griseus. Sooty Shearwater.—Jones Beach, May 30 (Kassoy, Herbert).

Oceanodroma leucorhoa leucorhoa. Leach's Petrel.—Off Seabright, Sept. 9 (Fred Allen).

Oceanites oceanicus. Wilson's Petrel.—3, Hudson River off Riverdale, Sept. 1 (Cruickshank).

Phalacrocorax carbo carbo. European Cormorant.—Ocean County, Barnegat Region, March 22 (Baker, Urner).

Phalacrocorax auritus auritus. Double-crested Cormorant.—200, flying over the American Museum of Natural History, April 22 (Watson); 75, Darien, Conn., Aug. 4 (Janvrin); Hudson River, Dec. 15 (Cruickshank).

Casmerodius albus egretta. American Egret.—Laurelton, May 11 (Fry); Barnegat, May 23 (C. K. Nichols); Troy Meadows, July 4 (Knoblauch); Kentsico, Aug. 1 (J. and R. Kuerzi); High Ridge, Conn., Aug. 1 (Vogt).

Egretta thula thula. Snowy Egret.—Darien, Aug. 9 (Janvrin).

Florida caerulea caerulea. Little Blue Heron.—Speonk, April 5 (Wilcox); Montauk, April 11 (W. T. Helmuth); Grassy Sprain, April 26 (Kassoy, J. Kuerzi, Farley); 2, Jones Beach, June 6 (Rich); 3, Jones Beach, Sept. 21 (Woodmere Academy Bird Club).

Butorides virescens virescens. Eastern Green Heron.—Central Park, Aug. 24-Oct. 8 (Watson, etc.).

Nyctanassa violacea violacea. Yellow-crowned Night Heron.—Reported in the *New York Sun* of April 24 (with photograph) as having come aboard the S.S. President Roosevelt, April 3, 750 miles east of New York; Troy Meadows, May 17 (C. K. Nichols); Van Cortlandt Park, through much of May and June, an immature changing to adult plumage (Herbert, Kassoy); Oakwood Beach, June 3 (J. and R. Kuerzi); Newark Bay, Aug. 9 (Herbert); 7, Newark Bay, Aug. 15 (Urner); Central Park, an injured bird, Sept. 22, 25 (Brand, Watson).

Botaurus lentiginosus. American Bittern.—Central Park, Sept. 1 (Watson).

Guara rubra. Scarlet Ibis.—Long Beach, Oct. 18, picked up dead but in good condition (Hagood). The specimen was examined by Dr. Chapman who pointed out that since captive birds fade, while mounted specimens do not, the pallid red feathers of this specimen left little doubt that it was not a wanderer from its tropical habitat. It was thought that the bird had either escaped from some aviary or had been thrown overboard, dead, from a vessel importing it.

Cygnus columbianus. Whistling Swan.—17, Long Beach, Nov. 29 (Janvrin).

Branta canadensis canadensis. Common Canada Goose.—9 flying over Central Park, Oct. 27 (Dr. C. L. Pollard).

Branta bernicla hrota. American Brant.—11, Barnegat, May 26 (Kuser, Fry, Williams).

Chaulelasmus streperus. Gadwall.—Tod's Neck, Conn., April 12 (J. Kuerzi, Farley, Vogt); Troy Meadows, April 12, 19 (J. M. Johnson); 19, Brookhaven, Nov. 14 (J. and R. Kuerzi, Wilcox); 5, Brookhaven, Nov. 26; 2, Brookhaven, Dec. 6 (Breslau, Sedwitz, etc.); Mill Neck, Dec. 20 (Breslau, Sedwitz, Lind).

Mareca penelope. European Widgeon.—Drake, Brookhaven, Nov. 28 (Barry, Hickey, J. and R. Kuerzi).

Dafila acuta tsitsihoo. American Pintail.—2 pair, Jones Beach, June 6 (Rich).

Querquedula discors. Blue-winged Teal.—Croton Point, April 5 (Watson); Overpeck, April 12 (Breslau).

Spatula clypeata. Shoveller.—Overpeck, April 9, 12 (Breslau); Boonton, Nov. 8 (Chaliff); 10, Brookhaven, Nov. 14 (J. and R. Kuerzi, Wilcox); Hempstead Reservoir, Nov. 29, Dec. 6 (Allen, Sedwitz).

Nyroca americana. Redhead.—4, Croton Point, Dec. 13 (Vogt).

Nyroca collaris. Ring-necked Duck.—Stony Brook Reservoir, March 21 (Edwards); Troy Meadows, March 21 (J. and R. Kuerzi); 30, on reservoirs west of Boonton, March 29 (Carter, Mayr, Kassoy, J. and R. Kuerzi); 2 pair, Decker's Pond, N. J., April 12 (Edwards, Urner).

Clangula hyemalis. Old-squaw.—Barnegat, May 26 (Kuser, Fry, Williams); Tod's Neck, Aug. 14 (Vogt).

Somateria mollissima dresseri. American Eider.—Drake, Barnegat, Jan. 10 (Eayre, I. Kassoy, R. Kuerzi, J. Matuszeuski, C. Urner).

Melanitta deglandi. White-winged Scoter.—Branchville, May 20 (Fry).

Melanitta perspicillata. Surf Scoter.—Long Beach, Aug. 2 (Weil, Breslau, Sedwitz).

Lophodytes cucullatus. Hooded Merganser.—Van Cortlandt Park, Oct. 15 (Cruikshank).

Mergus merganser americanus. American Merganser.—Kensico, Oct. 24, earliest for Bronx Region (Peterson, Vogt).

Mergus serrator. Red-breasted Merganser.—Croton Point, May 24 (Vogt).

Cathartes aura septentrionalis. Turkey Vulture.—Bear Mountain, March 15 (Yeaton); 45, Dingman's Ferry, March 22 (Carter); Bedford Hills, March 27 (Mrs. Oliver Coolidge); Scarsdale, March 29 (Phillips); Croton Point, April 5 (Rich); Westchester, April 25 (Cruikshank); 3, near Katonah, June 14 (Janvrin); Far Hills, Nov. 3, reported by a Montclair observer to Eaton.

Buteo platypterus platypterus. Broad-winged Hawk.—Central Park, April 21 (Cruikshank); Deer Park, L. I., May 22 (Matuszewski); Putnam County, June 14 (Hickey, Farley, J. Kuerzi).

Buteo lagopus s. johannis. American Rough-legged Hawk.—Westchester, Oct. 24 (Peterson, Vogt).

Haliaeetus leucocephalus. Bald Eagle.—Franklin Lake, April 18 (Mr. and Mrs. Rich); Lake Mahopac, June 14 (Hickey, Farley, J. Kuerzi).

Pandion haliaetus carolinensis. Osprey.—Bronx, March 23 (Cruikshank).

Falco peregrinus anatum. Duck Hawk.—Owls Head Park, Brooklyn, May 17 (Hix); Bull Mountain, Cold Spring, June 14 (Farley, Hickey, J. Kuerzi); Pound Ridge, Oct. 11 (Vogt); Central Park, Nov. 15 (Watson).

Falco columbarius columbarius. Eastern Pigeon Hawk.—Bronx, April 9 (Cruikshank); Princeton, May 17 (Rogers).

Bonasa umbellus umbellus. Eastern Ruffed Grouse.—Deer Park, L. I., May 22 (Matuszewski).

Colinus virginianus virginianus. Eastern Bob-white.—Downy young, Middle Island, L. I., Oct. 12 (Yeaton).

Rallus limicola limicola. Virginia Rail.—Bronx, April 9 (Cruikshank).

Porzana carolina. Sora.—Central Park, Sept. 10 (Cruikshank).

Fulica americana americana. American Coot.—Central Park, Nov. 12 (Brand).

Charadrius semipalmatus. Semipalmated Plover.—Central Park, Sept. 9, 18 (Watson, R. and B. Berliner); during the fall this species, apparently the same individual, either a melanistic example (Dr. Weigmann, on Staten Island), or an oil-smudged bird (Herbert, at Newark Bay).

Pluvialis dominica dominica. American Golden Plover.—Oakwood, Sept. 10 (Janvrin); Secaucus, Sept. 13 (Edwards, Herbert, Kassoy).

Philohela minor. American Woodcock.—Mastic, Jan. 5 (Dana); Central Park, April 25 (Watson).

Capella delicata. Wilson's Snipe.—Bronx, March 12 (Cruikshank); Central Park, April 9 (Breslau); Central Park, Sept. 10 (Cruikshank).

Phaeopus hudsonicus. Hudsonian Curlew.—Oakwood Beach, May 21 (Cruikshank); Barnegat, May 23 (C. K. Nichols); Oakwood Beach, June 3 (J. and R. Kuerzi).

Bartramia longicauda. Upland Plover.—20 pairs, breeding in central and south central New Jersey (Urner) ; 1, Montauk, Aug. 30 (Breslau, Sedwitz, Weil).

Actitis macularia. Spotted Sandpiper.—Westchester, April 19 (L. N. Nichols).

Catoptrophorus semipalmatus semipalmatus. Eastern Willet.—Barnegat, May 25 (Kuser, Fry, Williams) ; 223 counted in June, breeding over 11 miles of marsh, near Fortescue, N. J. (Urner, Edwards, J. Kuerzi).

Totanus melanoleucus. Greater Yellow-legs.—2, Hempstead, Dec. 13 (Breslau, Sedwitz, Lind).

Totanus flavipes. Lesser Yellow-legs.—Bronx, March 26 (Cruickshank) ; Jones Beach, April 12 (Janvrin).

Calidris canutus rufus. American Knot.—40, Oakwood Beach, June 6 (Hix).

Arquatella maritima. Purple Sandpiper.—Long Beach, Jan. 1 (Breslau, Sedwitz, Lind) ; Long Beach, Nov. 29 (Janvrin).

Pisobia melanotos. Pectoral Sandpiper.—Central Park, Sept. 9, 11 (Watson, B. Berliner).

Pisobia minutilla. Least Sandpiper.—Central Park, May 12, 16 (Watson) ; 6, Oakwood Beach, June 6 (Hix).

Limnodromus griseus griseus. Eastern Dowitcher.—5, Phelps Estate, near Englewood, N. J., April 21 (L. N. Nichols) ; "many," Jones Beach, July 8 (Rich) ; unusually large numbers migrating between July 5-21, reported by J. T. Nichols.

Micropalama himantopus. Stilt Sandpiper.—4, Jones Beach, Sept. 5 (R. and B. Berliner).

Ereunetes mauri. Western Sandpiper.—Central Park, Sept. 1, 2, 18 (Watson).

Tryngites subruficollis. Buff-breasted Sandpiper.—Newark Bay, Sept. 6 (Herbert, Kassoy).

Phalaropus fulicarius. Red Phalarope.—Barnegat, a female, May 26 (Kuser, Fry, Williams).

Steganopus tricolor. Wilson's Phalarope.—1 dead, Seabright, Sept. 7 (Fred Allen) ; Secaucus, Sept. 13 (Edwards, Herbert, Kassoy).

Stercorarius parasiticus. Parasitic Jaeger.—Atlantic Beach, Aug. 30 (R. and B. Berliner) ; Oakwood Beach, Sept. 26 (Chapin, Cleaves, Rich).

Larus hyperboreus. Glaucous Gull.—Croton Point, March 20 (Thurston) ; Oakwood Beach, May 27 (Janvrin).

Larus leucopterus. Iceland Gull.—2, Oakwood Beach, June 3 (J. and R. Kuerzi).

Larus marinus. Great Black-backed Gull.—Quogue, July 4 (Weil, Breslau, Sedwitz).

Larus delawarensis. Ring-billed Gull.—60, Jones Beach, Aug. 23 (Breslau, Sedwitz, Weil).

Larus philadelphia. Bonaparte's Gull.—1,000, upper New York Bay, April 26 (Rich, Janvrin) ; Barnegat, May 25 (Kuser, Fry, Williams).

Sterna forsteri. Forster's Tern.—Montauk, Aug. 30 (Breslau, Sedwitz, Weil); Mecox Bay, Oct. 24 (Wilcox).

Sterna fuscata fuscata. Eastern Sooty Tern.—New York Harbor, Aug. 14, seen in comparison with gulls and *Sterna hirundo*, identification putative (Kassoy).

Hydroprogne caspia imperator. Caspian Tern.—Manasquan, May 11 (Fry); Oakwood Beach, May 17 (Rich).

Chlidonias nigra surinamensis. Black Tern.—Barnegat, May 12 (Fry); New York Harbor, May 24 (Hix).

Alle alle. Dovekie.—Montauk, Jan. 24 (Kessler, J. and R. Kuerzi); 20, over pond at Jones Beach State Bird Sanctuary, one collected and given to the American Museum of Natural History, Dec. 24 (R. Franklin).

Tyto alba pratincola. Barn Owl.—Troy Meadows, May 17 (C. K. Nichols).

Nyctea nyctea. Snowy Owl.—Jones Beach, Nov. 29 (Allen, Sedwitz, etc.).

Strix varia varia. Northern Barred Owl.—Central Park, April 19 (Watson); Troy Meadows, Nov. 8 (C. K. Nichols).

Asio flammeus flammeus. Short-eared Owl.—Central Park, April 29 (R. Edge).

Antrostomus vociferus vociferus. Eastern Whip-poor-will.—8, Deer Park, L. I., May 26 (Matuszewski).

Ceophloeus pileatus abieticola. Northern Pileated Woodpecker.—Sussex County, May 17 (Rich).

Campephilus principalis. Ivory-billed Woodpecker.—Between Sanford and Orlando, Fla., April 18 (reported by S. R. MacDonald to J. T. Nichols).

Tyrannus tyrannus. Eastern Kingbird.—Eastport, L. I., April 4 (Wilcox).

Myiarchus crinitus boreus. Northern Crested Flycatcher.—Bronx Park, May 1 (L. N. Nichols).

Empidonax virens. Acadian Flycatcher.—2, Bernardsville, May 10 (C. and D. Kuser); Tibbetts Valley, May 17 (Cruickshank).

Nuttallornis mesoleucus. Olive-sided Flycatcher.—Jamaica, Aug. 8 (Weil, Breslau, Sedwitz); Pound Ridge, Aug. 16 (Vogt); Woodmere, Aug. 25, Sept. 4 (R. and B. Berliner); Central Park, Sept. 9 (Watson); Central Park, Sept. 21 (Cruickshank); Phelps Estate, Sept. 22 (L. N. Nichols).

Otocoris alpestris. Horned Lark, sp. (probably Prairie).—7, flying south over Perth Amboy, June 12 (Urner).

Iridoprocne bicolor. Tree Swallow.—7, Bronx Park, Nov. 23 (Cruickshank).

Stelgidopteryx ruficollis serripennis. Rough-winged Swallow.—Van Cortlandt Park, April 5 (Breslau); Manursing Island, April 5 (Oboiko, J. Kuerzi, Kassoy, etc.).

Hirundo erythrogaster. Barn Swallow.—Croton Point, April 5 (Farley, J. Kuerzi).

Petrochelidon albifrons albifrons. Cliff Swallow.—3, Sheepshead Bay, Oct. 10 (Cruickshank).

Progne subis subis. Purple Martin.—Manursing Island, April 12 (Oboiko, Kuerzi, etc.).

Corvus corax principalis. Northern Raven.—Troy Meadows, April 19 (Carter).

Baeolophus wollweberi annexus. Bridled Titmouse.—Ridgewood, N. J., Oct. 11, "white line over eye, dark line through it, white cheek and underparts without color noted" (C. K. Nichols).

Troglodytes aedon aedon. Eastern House Wren.—Smallwood, N. J., Jan. 3 (R. T. Clausen).

Thryothorus ludovicianus ludovicianus. Carolina Wren.—Roslyn, L. I., June 6 (Fry).

Cistothorus stellaris. Short-billed Marsh Wren.—Culver Lake, May 23 (L. N. Nichols); Central Park, singing, July 13 (Watson); Pound Ridge, Aug. 16 (Vogt); Jones Beach, Sept. 27 (Woodmere Academy Bird Club).

Mimus polyglottos polyglottos. Eastern Mockingbird.—Jones Beach, Sept. 27 (Woodmere Academy Bird Club).

Toxostoma rufum. Brown Thrasher.—Bronx Park, Nov. 13 (Cruickshank).

Hylocichla ustulata swainsoni. Olive-backed Thrush.—Baychester, Oct. 20 (L. N. Nichols).

Hylocichla minima minima. Bicknell's Thrush.—Speonk, Oct. 16 (Wilcox).

Poliophtila caerulea caerulea. Blue-gray Gnatcatcher.—Jones Beach, Aug. 5 (Sedwitz, Breslau, Weil); Woodmere, Sept. 3 (R. Berliner).

Regulus satrapa satrapa. Eastern Golden-crowned Kinglet.—Westchester, May 5 (Cruickshank).

Anthus spinoletta rubescens. American Pipit.—8, Bronx Park, Nov. 13 (Cruickshank).

Lanius borealis borealis. Northern Shrike.—North Salem, April 25 (J. Kuerzi); Oakwood Heights, Oct. 12 (Decker).

Lanius ludovicianus migrans. Migrant Shrike.—Atlantic Beach, Aug. 23 (R. and B. Berliner).

Vireo solitarius solitarius. Blue-headed Vireo.—Putnam County, June 14 (Farley, Hickey, J. Kuerzi).

Vireo philadelphicus. Philadelphia Vireo.—City Hall Park, May 16 (Breslau, Sedwitz); Troy Meadows, Aug. 9 (Weil, Breslau, Sedwitz); Central Park, Sept. 4, 16 (Watson, etc.).

Protonotaria citrea. Prothonotary Warbler.—Bronx Botanical Gardens, April 25, 26 (Bronx County Bird Club); Elizabeth, May 2 (Urner); Princeton, May 17 (Rogers); Troy Meadows, May 24 (Breslau, Sedwitz).

Vermivora chrysoptera. Golden-winged Warbler.—2, Roslyn, May 16 (Fry).

Vermivora leucobronchialis. Brewster's Warbler.—Bernardsville, May 10 (C. Kuser); Darlington, May 10 (C. K. Nichols).

Vermivora lawrencei. Lawrence's Warbler.—Bronx Park, May 15 (Hickey).

Vermivora peregrina. Tennessee Warbler.—Tibbetts Brook Park, May 17 (Cruickshank); Central Park, Oct. 2 (Watson).

Vermivora celata celata. Orange-crowned Warbler.—Tibbetts Brook Park, May 17 (Cruickshank); Central Park, Aug. 10 (Watson, B. Berliner).

Vermivora ruficapilla ruficapilla. Nashville Warbler.—2, Putnam County, June 14 (Hickey, Farley, J. Kuerzi); Central Park, Aug. 10 (Watson).

Compsothlypis americana pusilla. Northern Parula Warbler.—Bronx, Oct. 30 (Cruickshank).

Dendroica tigrina. Cape May Warbler.—Central Park, Aug. 10 (Watson); Van Cortlandt Park, Oct. 15 (Cruickshank).

Dendroica castanea. Bay-breasted Warbler.—Central Park, Aug. 31 (Watson).

Dendroica pinus pinus. Northern Pine Warbler.—Central Park, Sept. 11, Oct. 1, 8 (Watson).

Dendroica discolor discolor. Northern Prairie Warbler.—Scarsdale, June 8 (Fry); reported increasing as a breeding bird in Westchester (J. Kuerzi).

Dendroica palmarum palmarum. Western Palm Warbler.—1 singing, Central Park, May 1 (Watson).

Dendroica palmarum hypochrysea. Yellow Palm Warbler.—Central Park, Sept. 1 (Watson).

Seiurus aurocapillus. Oven-bird.—Central Park, Nov. 2 (Cruickshank).

Seiurus noveboracensis noveboracensis. Northern Water-Thrush.—5 or 6 singing, Putnam County, June 14, a marked increase (Hickey, Farley, J. Kuerzi).

Seiurus motacilla. Louisiana Water-Thrush.—Yonkers, March 31 (F. E. Johnson).

Oporornis formosus. Kentucky Warbler.—Reported decreasing as a breeding bird in Westchester: 3 pairs this year where, formerly, there were 6 (Kuerzi).

Oporornis philadelphia. Mourning Warbler.—Bernardsville, May 7 (C. Kuser); Central Park, May 26 (Hix); Scarsdale, May 27 (Fry).

Geothlypis trichas brachidactyla. Northern Yellow-throat.—Croton Point, Jan. 11 (Peterson, Vogt); Feb. 2 (J. and R. Kuerzi).

Agelaius phoeniceus phoeniceus. Eastern Red-wing.—Central Park, May 1, 16, Aug. 24, Nov. 2, 11, 16 (Watson).

Icterus spurius. Orchard Oriole.—Deer Park, L. I., May 22 (Matuszewski).

Icterus galbula. Baltimore Oriole.—Bronx Park, May 1 (L. N. Nichols).

Richmondia cardinalis cardinalis. Eastern Cardinal.—Reported by Mrs. H. J. Slaker as nesting in Scarborough, Westchester.

Hedymeles ludovicianus. Rose-breasted Grosbeak.—Roslyn, May 30, June 13 (Fry).

Passerina ciris. Painted Bunting.—Flushing, Nov. 11 (Mrs. Wm. H. Carr).

Carduelis carduelis britannica. British Goldfinch.—Westbury, L. I., June 3-6 (Matuszewski); Prospect Park, September and October (Wilmarth).

Loxia curvirostra pusilla. Red Crossbill.—Montauk, Nov. 26 (Allen, Breslau, etc.) ; Bronx Park, Dec. 1-5 (Cruickshank) ; 9, Westbury, Dec. 6 (Matuszewski, J. T. Nichols) ; Bronx Park, Dec. 12 (Carleton).

Pipilo erythrophthalmus erythrophthalmus. Red-eyed Towhee.—Kensico, March 18 (Farley).

Passerculus savanna savanna. Eastern Savannah Sparrow.—Central Park, May 14 (Cruickshank).

Pooecetes gramineus gramineus. Eastern Vesper Sparrow.—Croton Point, Feb. 2 (J. and R. Kuerzi).

Junco hyemalis hyemalis. Slate-colored Junco.—Princeton, May 17 (Rogers).

Spizella arborea arborea. Eastern Tree Sparrow.—Central Park, Nov. 11, 12 (Watson).

Spizella passerina passerina. Eastern Chipping Sparrow.—Central Park, March 2 (Breslau) ; Bronx, April 9 (Cruickshank).

Zonotrichia leucophrys leucophrys. White-crowned Sparrow.—Central Park, singing, May 16 (Watson) ; Tibbetts Valley, May 17 (Cruickshank).

Passerella iliaca iliaca. Eastern Fox Sparrow.—Phelps Estate, April 28 (L. N. Nichols).

Report of the Secretary for 1930-1931

During the past year the Linnæan Society has held sixteen regular and four informal summer meetings in which the total attendance was 947, a slight increase over last year.

The Annual Dinner of the Society was held in the Dining Room of the American Museum of Natural History and was attended by 71 members and guests and the Annual Meeting immediately following, attracted 51 members and 43 guests.

At the remaining 15 regular meetings the attendance averaged 57.1; that of members 26.6, this average being a little below that of last year.

The informal summer meetings again proved successful with an average of 24.1 persons.

The most populous meeting of the year was on November 25 when the Society was addressed by Mr. John M. Holzworth on "The Wild Grizzlies of Alaska." The smallest attendance was on March 25, when 39 were present.

Of the regular meetings two were devoted to discussions and field notes; one was on Herpetology and one on Mammalogy; three were on Travel and the remaining were primarily ornithological.

The following papers were presented:

Shore Birds and Shore Animals.....	Dr. Frank R. Oastler
Nesting Pelicans of the California Coast.....	Ludlow Williams
Birding in Florida from a Ford.....	John F. Kuerzi
Nature Notes on an Alaskan Trip.....	Charles H. Rogers
A Collector's Experiences in Santa Domingo.....	Wm. G. Hassler
Proceedings of the A. O. U. Convention....	J. T. Nichols—C. A. Urner
A Novice with a Motion Picture Camera among the Home Birds.....	B. S. Bowdish
Wild Grizzlies of Alaska.....	John M. Holzworth
Birds of the Bear River Marshes.....	Dr. Frank R. Oastler
A Trip through the Gaspé Peninsula.....	John F. Kuerzi
Through Brazil to the Summit of Mt. Roraima.....	T. D. Carter
Collecting Living Birds of Paradise in New Guinea,..	Lee S. Crandall
Ornithological Rambles in Guatemala.....	Ludlow Griscom
Nesting Ospreys.....	S. Harmsted Chubb

The Society has lost through the death of R. Clifford Black and Maunsell S. Crosby two outstanding members. Several members have resigned or have been dropped for non-payment of dues and six new members have been elected. Our membership now stands the same as last year: Resident, 156; Life, 3; Fellows, 7; Honorary, 2; Non-resident, 17.

Numerous trips afield have been taken by members. Mr. Urner is still continuing his good work in the Barnegat region; Messrs. Eaton, Walsh, Edwards and Urner their work in Northern New Jersey, and Mr. Kuerzi continuing in the Bronx region and Westchester County.

The Secretary regrets that his field work and other causes frequently interfered with his attendance at the meetings and in retiring from office he wishes to express his sincere appreciation to the Society for their co-operation and also for their overlooking his many shortcomings. He wishes to thank our President, Mr. Charles A. Urner, for his help and kindly advice. He also owes a debt of gratitude to Mr. John F. Kuerzi and to Mr. William Vogt for their capable and generous assistance.

Respectfully submitted,

T. DONALD CARTER.

Report of the Secretary for 1931-1932

The Linnæan Society of New York has held, during the past year, sixteen regular, and four informal, summer meetings. There has been a perceptible increase in the attendance at meetings both of members and guests.

The Annual Dinner of the Society was held at the American Museum of Natural History. The address of the evening, by Dr. Robert Cushman Murphy, was entitled "Evolutionary Problems Among Island Birds." The attendance of members at the remaining fifteen regular meetings averaged 34.2; that of visitors, 47.9.

Informal summer meetings were attended by an average of 17.8 persons. More significant than the increased number of members at these meetings was the consistently late hour of their closing. Giving considerable pain to employes of the Museum, the unwillingness to go home was evidence both of the meetings' interest and value. There seems little doubt that they have become an integral and firmly established part of the Society's program.

The increased attendance may be in large degree assigned to the generous cooperation of scientists who have addressed the Society. The meeting of October 27th, with 200 members and guests, overtaxed the capacity of one of the Duplex Halls and probably broke all Society records for attendance.

The Society suffered a grievous loss in the death of two of its distinguished and veteran members. Maunsell S. Crosby, who at various times had held every office in the Society, and whose work on the birds of his home county has seldom, if ever, been surpassed by anyone studying a similar area, died suddenly in Rhinebeck. Charles Johnston, for many years one of the most active and meticulous of local bird students, passed away after a lingering illness. The many members of the Society who were privileged to know these men as friends feel that they have suffered a loss that is as deep as it is irreparable.

Several members have resigned or been dropped for non-payment of dues and 14 new members have been elected so that membership now stands: Resident, 150; Life, 3; Fellows, 9; Honorary, 1.

As the chief interest of the Society continues to be ornithology, this subject has received the preponderance of attention at meetings.

One meeting, however, was devoted to herpetology, and one to mammalogy. The speakers, and their subjects, were as follows:

March 10: Evolutionary Problems Among Island Birds, by Dr. Robert Cushman Murphy.

March 24: A Collector's Experiences in Madagascar, by Richard Archbold.

April 14: Hobnobbing with Hoatzins, by Mr. Charles L. Pollard.

April 27: Mysteries of Bird Flight, by Dr. Lucien H. Warner.

May 12: Birds and Mammals of Barro Colorado, by Dr. Frank M. Chapman.

October 27: Snakes of the New York Region, by Dr. Raymond L. Ditmars.

November 10: Evolution by Mutation in Birds, by Dr. Frank M. Chapman.

November 24: Experiments in Photographing Bird Song, by Mr. Albert Brand, and In a Southern Swamp, by Richard Archbold.

December 8: Adventures in Bird Protection, by Dr. T. Gilbert Pearson.

December 22: Zonal Bird Distribution in the Belgian Congo, by Dr. James P. Chapin.

January 12: Symposium on Christmas Censuses, led by Mr. J. T. Nichols.

January 26: Some Problems of Bird Migration, by Dr. Ernst Mayr.

February 9: Bird Protection on the Maine Coast, by Mr. Robert P. Allen.

February 23: Symposium on Local Mammals, led by Mr. Robert T. Hatt.

During the past year there has been a regrettable and noticeable diminution in local field data turned in to the Secretary for inclusion in the Society's minutes. As the New York region is canvassed from year to year there must, necessarily, be a decrease in unusual dates and new locality records. There has been no lessening in field activity and it would seem desirable to file migration and occurrence records, whether they are extraordinary or not.

This lack has been balanced, if not offset, by a very evident increase of attention to Conservation, no doubt influenced by the interests of our President. Conservation activities during the year included: discussions of New Jersey Senate Bill 208, with opposition by individual members; a resolution sent to the U. S. Biological Survey against opening the season on shore-birds; an investigation of poisoning activities in Central Park; a protest against the shooting of hawks and owls in High Point Park, N. J.; resolutions endorsing the establishment of Admiralty Island and the Guggenheim Pond area as sanctuaries; a resolution protesting the slaughter of hawks and owls, sent to various conservation organizations and individuals; an endorsement of the establishment of the Everglades National Park, sent to every Congressman from New York and New Jersey; and the formation, principally by Linnæan Society members, of the Hawk and Owl Society, in an attempt to gain wider protection for these birds of prey. Members of the Society, furthermore, cooperated with the N. J. Audubon Society and the National Association, in their survey of the breeding bird colonies along the New Jersey coast.

Numbers 41 and 42 of the Abstract of Proceedings were published in the autumn. The publication includes two admirable summaries of the ornithological years 1928 and 1929, and adds much information to the material available on the summer birds of Putnam County. These three papers are by Mr. John F. Kuerzi. The fourth paper, an interesting contribution to local ornithological history, is John Lion Gardiner's notes on the birds of Gardiner's Island in the years 1794-1797. It was prepared for publication, and submitted, by Mr. L. N. Nichols.

The Society has been especially fortunate this year in the establishment of a series of lectures by members of the Department of Ornithology, of the American Museum. In closing, the Secretary wishes to express to these ornithologists his gratitude for their cooperation, and in addition, to thank our President, Mr. Eaton, and Messrs. Urner and J. F. Kuerzi, for their invaluable assistance and advice which, at many turnings, have made his way straight.

Respectfully submitted,

WILLIAM VOGT, Secretary.

Constitution and By-Laws of the Linnaean Society of New York, Adopted at Meeting of April 14, 1925; As Amended March 27, 1934

SECTION 1. General Organization.

Article 1. This Society shall be composed of persons, amateur or professional, interested in one or more branches of zoology, with particular reference to the New York City region.

Article 2. It shall consist of Resident, Life, Non-Resident, and Honorary Members, and Fellows.

Article 3. Resident Members, Life Members and Fellows only shall be entitled to vote, to hold office, to serve on committees and Council and to transact business. Non-resident Members and Honorary Members may attend the meetings and take part in the scientific discussions of the Society.

Article 4. The officers of the Society shall be a President, a Vice-President, a Secretary, a Recording Secretary, a Treasurer, and an Editor. (With the exception of the Treasurer and Editor no officer shall hold the same office more than two consecutive years, but shall again be eligible for election one year after the expiration of such a term.) Such officers, together with nine members at large, shall form a committee for the management of the concerns of the Society to be called the Council. Councilors shall serve for a term of three years.

Article 5. By-laws for the more particular regulation of the Society shall from time to time be made.

Article 6. This Constitution may be altered or amended by a vote to that effect of three-fourths of the Resident Members, Life Members and Fellows present at any meeting of the Society; each Resident Member, Life Member and Fellow having been notified in writing at least thirty days previous to action on the proposed change.

SECTION 2. Of Members.

Article 1. Resident Members shall be persons living in New York City and vicinity who have shown interest for several years in one or more branches of zoology. Resident Members may become Life Members upon the payment to the Treasurer of Fifty Dollars, at one time, which shall be in lieu of annual dues.

Article 2. Non-Resident Members shall be similarly qualified persons, residing outside the New York City region, desirous of promoting the interests of the Society.

Honorary Members shall not exceed ten in number, and shall be persons eminent for their attainments in zoology.

Any Member may be elected a Fellow in recognition of distinguished service to the Society.

Article 3. All classes of Members shall be chosen by majority vote, after having been nominated at a preceding meeting and approved by the Council. Can-

didates for Resident Membership must be known personally to at least two members of the Council.

SECTION 3. Officers and Their Duties.

Article 1. The President shall preside at meetings of the Society and of the Council; shall preserve order; regulate debate; and conduct all business proceedings, strictly in accordance with parliamentary usage.

Article 2. The Vice-President shall perform the duties of President in the absence of the latter.

Article 3. The Secretary shall have charge of the archives of the Society; shall give notice to persons of their election as members, and to committees of their appointment; shall give notice of all regular meetings of the Society; shall call special meetings when directed by the President; shall give notice to all members of the Council of all Council meetings; shall inform officers of all matters requiring their attention; shall conduct the correspondence of the Society, and prepare all letters to be written in its name, retaining copies of them; and shall with the advice of the President prepare the programs for meetings of the Society.

Article 4. The Recording Secretary shall take and preserve correct minutes of the proceedings of the Society and shall preserve and compile in systematic order all field notes presented by members.

Article 5. The Editor, with the assistance of Associate Editors, who may be appointed by the President when necessary, shall edit and supervise all publications of the Society, and shall exchange and distribute them.

Article 6. The Treasurer shall collect all moneys due; shall pay all bills against the Society when approved by vote of the Council; shall keep a correct account of all receipts and expenditures and shall make a detailed report of the same at the Annual Meeting.

Article 7. Officers shall be nominated by the Council and chosen at the Annual Meeting, and a majority vote of the Resident Members, Life Members, and Fellows present shall be sufficient for a choice. The foregoing shall not be construed as precluding nomination of officers from the floor. Any office which becomes vacant during the year shall be filled at the next meeting of the Society in the same manner.

SECTION 4. Of the Council and its Duties.

Article 1. The Council shall pass upon all nominations of candidates for membership, and shall make such recommendations as it sees fit on new business initiated by properly qualified members. Its recommendations shall be presented by the Secretary at the next meeting whenever possible. A majority vote of the members present shall be sufficient to ratify favorable recommendations.

Article 2. It may initiate any new business, promoting the general interests and welfare of the Society, and a majority vote of the members attending the meeting at which such new business is presented shall be sufficient for ratification.

Article 3. It shall act as a nominating committee for officers and shall hold a special meeting for this purpose prior to the Annual Meeting of the Society.

Article 4. It shall hold regular meetings for the transaction of general business. Special meetings may be called by the President or upon the request of any three Councilors.

Article 5. Councilors shall be nominated by a committee to be appointed by the President at the Annual Meeting, such committee to consist of three members of the Society who are not members of the Council. This shall not be construed as precluding additional nominations from the floor. Councilors shall be chosen at the first regular meeting after the Annual Meeting, up to the number sufficient to fill the vacancies. In case the number of nominations exceeds the number of vacancies the election shall be by ballot. Those receiving the largest number of votes of Resident Members, Life Members, and Fellows present shall be elected. If, for any reason, a Councilor does not complete his term of office his successor for the remainder of the term shall be chosen at the next regular meeting by nomination from the floor and election as prescribed above.

SECTION 5. Of Meetings.

Article 1. A meeting shall be held annually for the choice of officers and for other general purposes. At this meeting the Secretary shall present a report upon the publications, meetings, membership, etc.; the Treasurer upon the receipts and expenditures. Previous to the Annual Meeting the President shall appoint a committee of two members, neither of whom shall be a member of the Council, to audit the accounts of the Treasurer.

BY-LAWS

SECTION I. Of Members.

Article 1. Every Resident Member shall be subject to annual dues of three dollars (\$3.00) and every Non-resident Member to annual dues of one dollar and a half (\$1.50), payable at the first regular meeting in March; but no dues shall be required of any member during two months succeeding his election. Any member absent on a scientific expedition during an entire year shall be excused from payment of dues for that year.

Article 2. Any member who shall neglect to pay his regular dues for one year, upon receiving due notification from the Treasurer, shall have his name erased from the roll of members.

Article 3. Any Resident or Non-resident Member may withdraw from the Society, by giving written notice of his intention and paying all arrearages due from him.

Article 4. Any undesirable member may be expelled from the Society upon recommendation of the Council by a three-fourths vote of the Resident and Life Members and Fellows present at any regular meeting, notice having been sent to each Resident Member, Life Member and Fellow, and to the person accused at least 30 days previously.

SECTION 2. Of Meetings.

Article 1. The Annual Meeting shall be held the second Tuesday in March.

Article 2. Regular meetings shall be held on the second and fourth Tuesdays of each month from October to May inclusive, except when suspended by a majority vote of the Society at a preceding meeting.

Article 3. Nine Resident Members, Life Members and Fellows shall form a quorum.

Article 4. The order of proceedings at meetings shall be as follows:

1. Reading of minutes of the previous meeting by the Secretary.
2. Reading of correspondence received by the Secretary.
3. Proposal of candidates for membership.
4. Election of members.
5. Business (a) Unfinished; (b) New.
6. Presentation of field notes.
7. Presentation of formal papers.
8. General discussion.
9. Adjournment.

SECTION 3. Of Changes of By-laws.

Article 1. The By-laws of the Society may be altered or amended by a three-fourths vote of the Resident Members, Life Members and Fellows present at any meeting, notice of the proposed change having been sent to each 30 days previously.

Officers and Members of the Linnaean Society of New York

OFFICERS 1932-1933

<i>President</i>	WARREN F. EATON
<i>Vice-President</i>	T. DONALD CARTER
<i>Secretary</i>	WILLIAM VOGT
<i>Treasurer</i>	DR. E. R. P. JANVRIN

OFFICERS 1933-1934

<i>President</i>	JOHN H. BAKER
<i>Vice-President</i>	CHARLES A. URNER
<i>Secretary</i>	DR. ERNST MAYR
<i>Treasurer</i>	DR. E. R. P. JANVRIN

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<i>Vice-President</i>	CHARLES A. URNER
<i>Secretary and Editor</i>	DR. ERNST MAYR
<i>Recording Secretary</i>	JOSEPH HICKEY
<i>Treasurer</i>	DR. E. R. P. JANVRIN

MEMBERSHIP LIST, JULY 1, 1934

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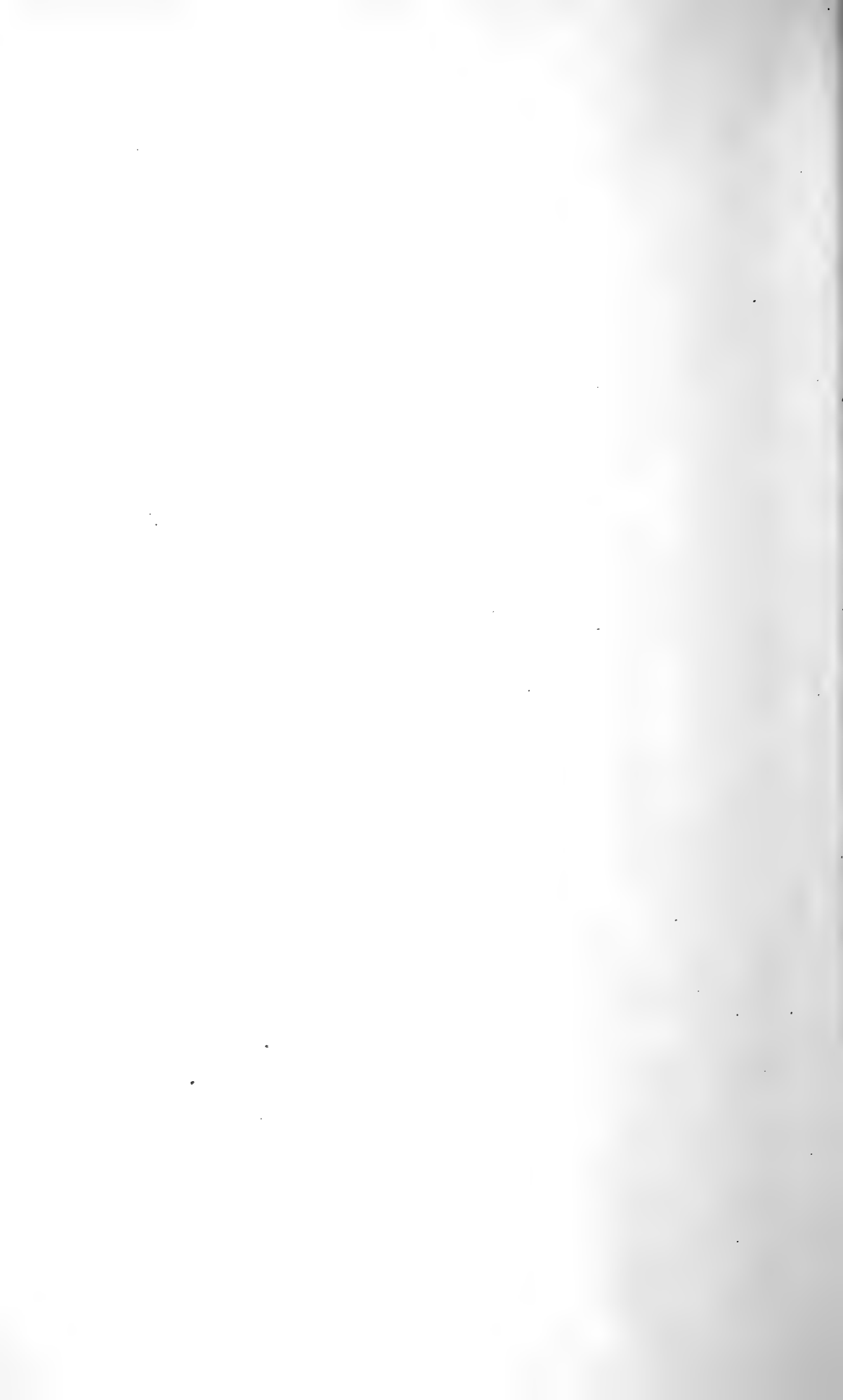
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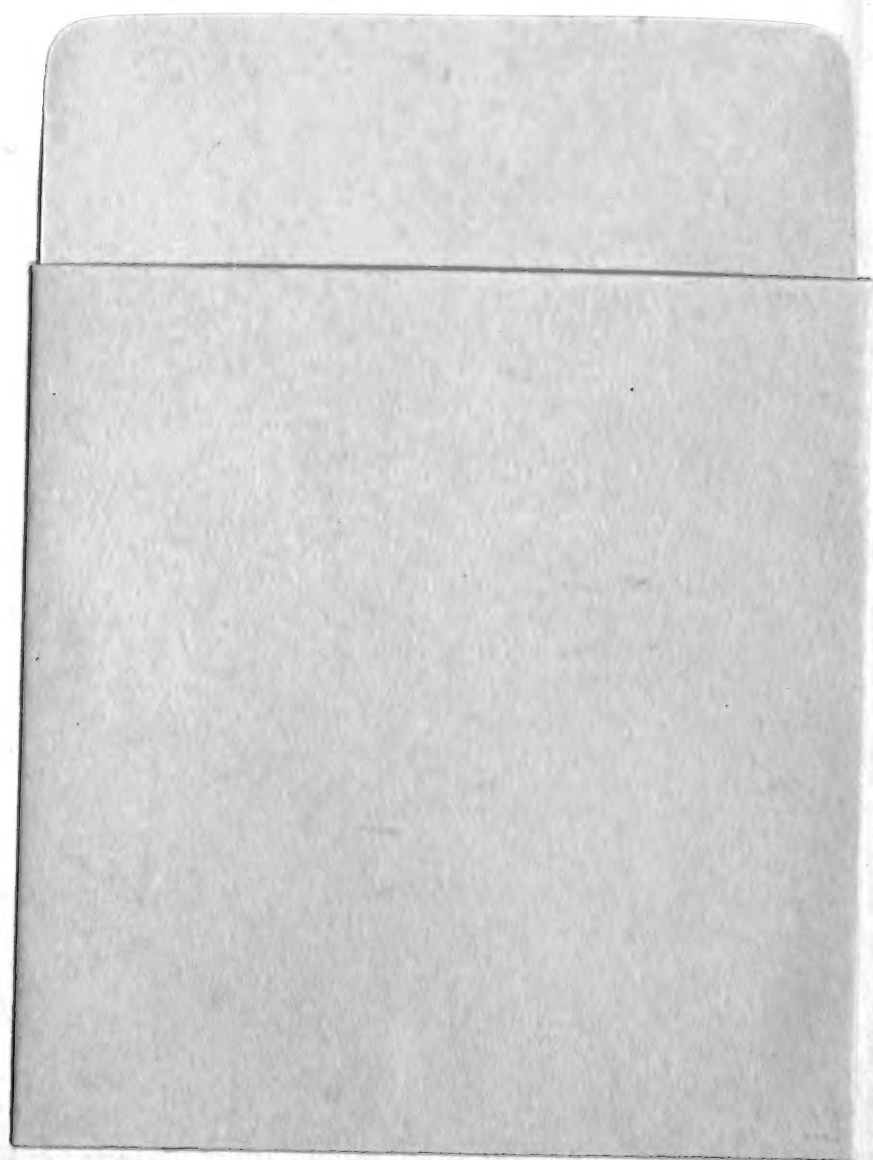
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